Archaeological Investigations

in the Eastern Maya Lowlands:

Papers of the 2005 Belize Archaeology Symposium

Edited by

John Morris, Sherilyne Jones, Jaime Awe and Christophe Helmke

Research Reports in Belizean Archaeology Volume 3

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Institute of Archaeology
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Cover design: Christophe Helmke
Frontispiece: Late Preclassic Jadeite Masquette from Cerros (Institute of Archaeology photographic files)

Back cover: Foreground: Late Preclassic Jadeite Earflare from Pomona (adapted from a photograph © Justin Kerr); Incised glyphs on a skeuomorphic shell earflare of jadeite from Kendal (adapted from a drawing by Linda Schele).

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In honour of all the Park Managers and Rangers

of the Institute of Archaeology

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Meetings of this scope are never possible without professional participation. We therefore thank all of our colleagues who took time from their busy schedules to attend and present papers in our symposium. The various themes of their papers serve to reflect the diversity of Belizean Archaeology, and provide a wealth of scientific information to the people of Belize. Thanks to our guest speaker, Dr. Paul Healy of Trent University, Canada for his stimulating overview of the Preclassic Maya in the Belize and his contributions to the development of Belizean Archaeology over the past twenty-five years.

Several editors and anonymous reviewers gave of their time and made constructive criticisms that enhanced our end product. A special thanks to George Thompson whose assistance in doing line editing and reviewing of all the bibliographic references was invaluable and appreciated.

Finally, it should be noted that our successes are a direct result of the tremendous effort expended by the entire staff of the Institute of Archaeology. Special thanks must be given to Enrique "Jack" Itza, Antonio Beardall, Melissa Badillo, Jorge "Stakey" Can, Darcy Corea, Claudia Elena, Nick Foster, David Griffith, Rafael Guerra, Delsia Marsden, Joyce Tun-Quewell, Wayne Moore, George Thompson Program Chair, and Brian Woodye, Executive Chairperson of the Symposium. We are grateful for your patience, expertise and invaluable help. The third volume of the Research Reports in Belizean Archaeology is a testimony to your dedication and your ability to address the challenges of our institution.

John Morris, Sherilyne Jones and Jaime Awe

Belmopan, Belize, June 2006

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23 LA MILPA: SHIFTING ALLIANCES SHIFTING FORTUNES

Kerry Lynn Sagebiel

The site of La Milpa, located in northwest Belize, had a long but uneven history. The site's location in the border region between the major states of Tikal, Calakmul, and Caracol gave it strategic significance and as a result, La Milpa was alternatively drawn into the political spheres of these states, although, at times, it was independent. The variable impact on La Milpa's political and socioeconomic fortunes resulting from the interrelated factors of its frontier status, population shifts, and political agency are investigated using the evidence from the ceramics as well as other material culture uncovered during the La Milpa Archaeological Project1992-2002, as well from the Maya Land and Water Use Project 1997-1999.

Introduction

Archaeological research at La Milpa revealed that it had a long history extending from the Late Preclassic to the Terminal Classic. However, this history has been interpreted by the principal investigators, Norman Hammond and Gair Tourtellot, as unstable with wildly fluctuating population changes. They assert that La Milpa "attracted heavy population only periodically rather than continuously" (Tourtellot et al. 2003:50). Tourtellot has even stated that Early Classic and Late/Terminal Classic La Milpa were so different that, "In effect, we are dealing with two different sites, from two different periods of time, which just happen to occupy the same space" (1997:2). The reality of dramatic population shifts is evaluated here through examination of the patterns of stylistic change and distribution of La Milpa's pottery as well as that of the local region.

The underlying reason for La Milpa's historical fluctuations may be its position on the landscape, which is somewhat unusual for a city its size. Unlike Lamanai and Caracol, the two larger sites in Belize, it is not near a major watercourse (Tourtellot 1997:6; Tourtellot et al. 2003:50) or a valuable natural resource such as jade, granite, or salt. However, La Milpa was located at the border of two large regional states — Tikal and Calakmul — and their political interactions affected the site. At times, it was allied with or incorporated into these "super-states" and, at other times, it was able to assert its independence (Tourtellot et al. 2003:50). La Milpa's position in a border or frontier region may underlie its population fluctuations, changing political alliances, and its mosaic and temporally uneven adoption of pottery styles.

Terminal Preclassic – Early Classic Transition

Most of the large sites in the northwest Belize/northeast Guatemala area, known as the Three Rivers Region, have evidence of intense elite activity during the Early Classic. At La Milpa, at least seven of the 20 stelae date to the Early Classic, although most were reset during the Terminal Classic to Early Postclassic (Hammond and Bobo 1994; Hammond and Tourtellot 2004), and at least one major tomb, the B11 tomb, dates to the Early Classic (Hammond et al. 1996). Two Early Classic tombs have also been discovered at the site of Dos Hombres (Sullivan and Valdez 2004:188-190). The site of Gran Cacao also has evidence of strong elite activity during the Early Classic including

an Early Classic round structure associated with a possible feast-related midden, several looted whole vessels probably from burials (Levi 1994), and a large amount of finely incised pottery including pieces from cylinder tripods (Lohse et al. 2005; Sagebiel 2005). At the site of Blue Creek, a jade cache and stucco masks are evidence of important Early Classic elite activity (Guderjan 1995). The minor center of Ixno'ha, including its ballcourt, was mostly built and occupied in the Early Classic too (Gonzalez 2005). Finally, the center of Río Azul grew substantially in the Early Classic with most of its elaborate painted tombs dating to that period (Adams 1999).

Although no one argues that elite activities increased in the Three Rivers Region during the Early Classic, it has been argued that the overall population decreased, particularly at the beginning of the Early Classic (Tzakol 1) (see Adams et al. 2004:329, Table 15.1; Hammond and Tourtellot 2004:297, Fig. 13.3). These arguments are based either directly on relative ceramic counts or by counting places dated to the Early Classic by using ceramics. The problem with using Early Classic ceramic dates and counts in the Three Rivers Region is that the transition from the production and use of Late Preclassic pottery to the adoption of Early Classic ceramics was rather gradual and uneven as will be demonstrated below.

Lauren Sullivan and I (Sullivan and Sagebiel 1999, 2003) have noted that much of the ceramic evidence for the Early Classic in northwest Belize is in the form of "fancy" painted pottery and serving wares, like that found in the tombs of the area, and that there is a relative dearth of Early Classic utilitarian pottery. The lack of Early Classic non-elite or utilitarian pottery is due to the continued use of Late Preclassic types into the first part of the Early Classic [Brady et al. (1998:34), Kosakowsky et al. (1998), Kosakowsky and Sagebiel (1999), Lincoln (1985), Sullivan (1998), and Sullivan and Valdez (1996).]

In addition, during the Terminal Preclassic/"Protoclassic"/Tzakol 1 (ca. A.D. 150/200-400) in northwest Belize, elites were using locally developed, stylistically transitional types. Three of these types predominate. First, Rio Bravo Red (Fig. 1) is a type whose forms and paste are usually Early Classic, but retains a Sierra Red or Late Preclassic waxy slip (Kosakowsky and Lohse 2003:7; Sagebiel 2005; Valdez and Houk 2000:130-135). Second, Águila Orange: Unnamed Bichrome (Kosakowsky and Lohse 2003; Sagebiel 2005), which develops out of Preclassic types like Society Hall Red: Unnamed dichrome and Bound-to-Shine varieties (Kosakowsky 1987), has forms and paste that are typically Early Classic but the slip and dichrome design are reminiscent of the Preclassic. Third is the type that I have provisionally designated Gua Red-on-cream (Figs. 2 and 3) after Adams at Altar de Sacrificios (1971). This type may be related to other red-on-creams, red-on-buffs, red-and-unslippeds, and red-striated such as Cashew Red-and-buff at Chan Chich (Valdez and Houk 2000:132), Puletan Red-and-unslipped and Escobal Red-on-buff in Northern Belize (Kosakowsky 1987; Pring 1977), Maax Red-striated at Tikal (Culbert n.d.), and a similar red and/or buff striated at Gran Cacao (Sagebiel 2005). Again, Gua Red-on-cream tends to have forms and pastes typical of the Early Classic while retaining Late Preclassic-like slips.

Elite-related burials and caches from northwest Belize demonstrate the gradual transition from the use of these locally developed elite types to the increased use of Petén style pottery. Perhaps the earliest "fancy" or elite burial from the area is the Chultun Burial T5 found near Blue Creek

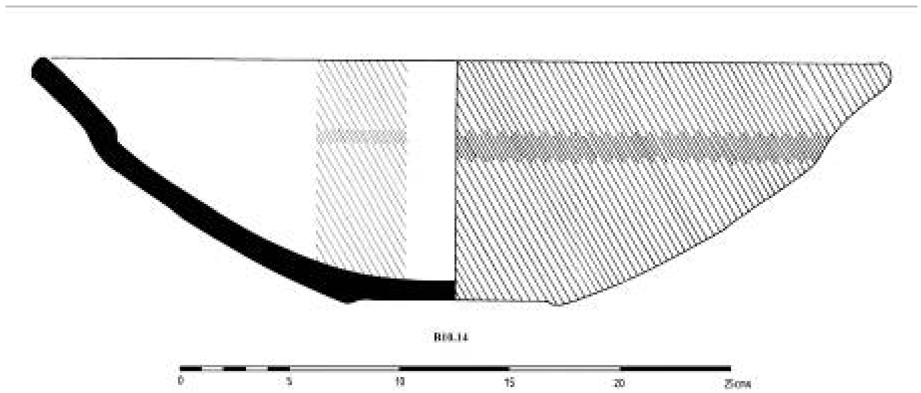

Figure 1. Río Bravo Red dish.

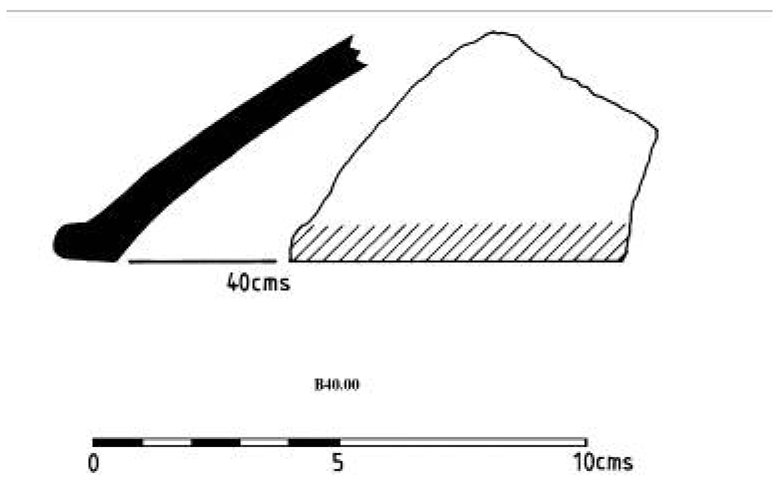

Figure 2. Gua Red-on-cream scutate lid

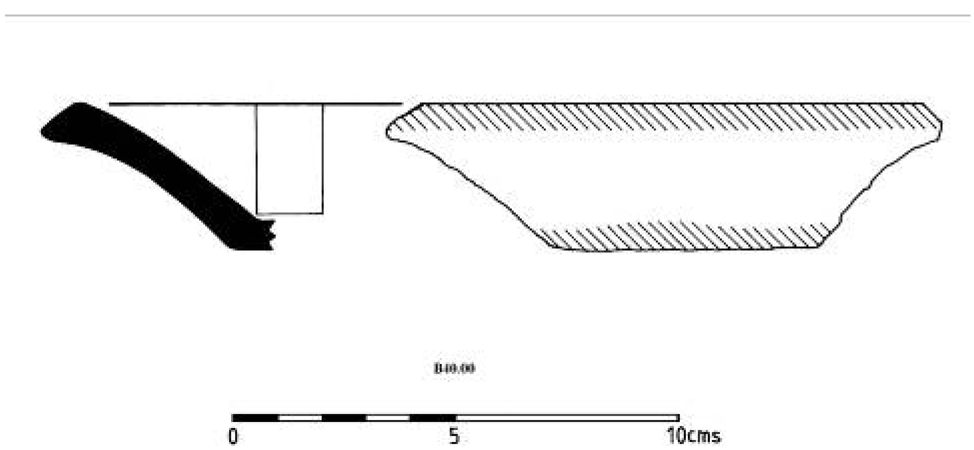

Figure 3. Gua Red-on-cream dish

(Kosakowsky and Lohse 2003). The vessels in this burial follow the "Protoclassic" canon and include lots of trickle wares, mammiform feet, and spouted jars. Chronologically next is Tomb 2 at Chan Chich (Valdez and Houk 2000). This burial did not include any clearly Petén-related types, but it did contain excellent examples of northwest Belize Terminal Preclassic/Early Classic local elite wares. These include Río Bravo Red and Laguna Seca Incised, Cashew Red-on-Cream and Mango Incised as well as Sierra Red and Matamore Dichrome (Valdez and Houk 2000:130-135). Although these vessels have typical "Protoclassic" forms such as mammiform feet and spouted jars, there is also an Early Classic form such as two basal flange bowls and several vessels with ring bases. The third and latest burial in the continuum is the early facet Early Classic tomb at Dos Hombres. It had typical Petén vessels such as a Dos Arroyos basal flange dish, a Yaloche Cream-polychrome scutate lid, cream pitchers, a pot stand, a coatimundi effigy, and a (Gua) red-on-cream basal flange dish (Sullivan and Sagebiel 2003:28-29; Sullivan and Valdez 2004:188-190). The two polychrome vessels in the Dos Hombres tomb are similar to ones found at Uaxactún, San Jose, and Chan Chich (Durst 1998; Sullivan 2002:204-211; Sullivan and Sagebiel 2003:28-30; Sullivan and Valdez 2004:189) indicating that ties between elites in northwest Belize and the Petén increased during the transition to the Early Classic.

At La Milpa, Río Bravo Red and Águila Orange vessels co-occur in caches in Plaza A indicating the overlap of these types into the beginning of the Early Classic and their use in elite-centered ceremony. Similarly, Gua Red-on-Cream and Águila Orange: Unnamed Bichrome is frequently found in the earliest components of eastern shrines and associated (often looted) elite burials.

I think it is clear that the drop in population that has been proposed for the Terminal Preclassic/Early Classic transition in the Three Rivers Region is mostly how the pottery has been dated and counted. Non-elites have been undercounted during the transition because of their continued use of "Late Preclassic" pottery. In addition, elites have possibly been undercounted because of their use of transitional types that may be lumped with the Preclassic or the Early Classic depending on the proclivities of the analyst. The reason for this gradual transition from the Preclassic to the Early Classic may be due to something Jon Hageman has suggested that — local (particularly rural) lineages' may have resisted integration into larger political units (2004:70). It is similarly possible that non-elites of the Terminal Preclassic/Early Classic transition resisted elite hegemony by holding onto their own socioeconomic traditions.

Late Early Classic – Hiatus

Although the Three Rivers Region may have been peripherally tied to emergent Petén states during the Terminal Preclassic and the beginning of the Early Classic (and there is evidence that Río Azul was independently ruled), there is clear evidence that Tikal forcibly moved into the area around A.D. 385-392 after the Smoking Frog/Teotihuacán entrada (Adams 1999). Adams states that the local Río Azul rulers were overthrown and replaced; and Río Azul was established as an outpost of Tikal, perhaps specifically to guard the border between Tikal and Calakmul (1999:185). Slightly later at La Milpa, located 40 km to the east of Río Azul (Adams 1999:31), two Early Classic stelae were erected that also tie it to the Tikal regional state. One dating to ca. A.D. 406 has the name Bird-Jaguar (as at Tikal) and another dating to ca. A.D. 426 has the name *K'inich K'uk Mo'* (as at

Copan) (Grube 1994:224-225; Hammond and Bobo 1994; Hammond and Tourtellot 1993:73, 2003:3-4; 2004:95; Hammond et al. 1996:90). It is unclear whether these are names of local rulers or rulers from other sites; however, if the dates are correct, they may indicate the expansion of the Tikal regional state.

The vessels in the B11 tomb at La Milpa also connect it to the Early Classic Tikal regional state. In particular, there is a vessel in B11 with a serpent motif (as recognized by Coggins [1975:212-213]; Sullivan and Sagebiel [2003:33]) that is nearly identical to vessels found in burials at Tikal (Culbert 1993; Fig. 32e),Uaxactun(Smith 1955; Figs. 13a-d), and Río Azul (Adams 1999:86) as well as a vessel from Copan (Longyear 1952; Fig. 117f). The La Milpa burial and all the others date to ca. A.D. 450. This is during the height of Río Azul and its rule under a son of Stormy Sky of Tikal (Adams 1999; Martin and Grube 2000). The stelae and the B11 tomb at La Milpa, as well as the vessels from the Grupo Barba burial near Dos Hombres (Sullivan 2002; Sullivan and Valdez 2004), indicate strong ties between the elites of the La Milpa area and the Tikal regional state during the latter part of the Early Classic. The nature of these connections, however, is still unknown.

There is evidence of a "hiatus" across the region likely brought on by the defeat of Tikal by Calakmul and Caracol in A.D. 562 and the defeat and burning out of nearby Río Azul around the same time (Adams 1999). Calakmul actually installed a ruler at Los Alacranes a year earlier in A.D. 561, which is just northwest of Río Azul (Martin and Grube 2000:104). This is also about the time of the jade cache and possible termination events at Blue Creek (Guderjan 1995). At La Milpa monumental construction ceased and stelae were not erected between ca. A.D. 500-700. Whether the area was temporarily abandoned by the general population is still debatable. There appears to be a lack of construction in La Milpa Centre and in the hinterlands at this time and the ceramic complex for the Late Classic I(Tepeu 1) period is difficult to define. Intriguingly, Belize Valley ash wares, such as Belize Red and Benque Viejo Polychrome, appear at this time, but Petén types continued to be used as well. However, although Saxche Orange-polychromes do occur, most of the relatively "fancy" serving wares of this period are simply slipped red. In fact, it is possible that Early Classic style pottery continues to be used by non-elites. That possibility plus the fact that the pottery that was made is of relatively poor quality and was not rapidly incorporated into new construction (due to its lack), may once again be giving us skewed population counts (Sagebiel 1999).

Late/Terminal Classic

Tourtellot and Hammond have said, "We see no reason that we must assume and adopt the customary gradualism that underpins the idea the ancient Maya were a great success with a long trajectory". That is at best true only in aggregate for the whole peninsula, not for most sites. Most sites and regions experienced what Peter Harrison has insightfully labeled a recurring series of 'crises' [Harrison 1977]" (1995:12). While Dennis Puleston proposed that periodic times of trouble were the result of self-fulfilling calendrical prophecies [Puleston 1979], we should perhaps reverse this view… "and see the (Postclassic) prophecies as based in bitter realities of repeated collapses from each of which it took several centuries for the land to recover and population to grow, once again perhaps to excess" (Tourtellot et al. 1995:12-13).

In line with this thinking, Tourtellot and Hammond have hypothesized a boom-bust cycle for La Milpa. In particular,

Tourtellot (1997:6-7) suggests four possibilities for the Late/Terminal Classic boom at La Milpa: 1.) A transient "migratory panic" caused by the collapse of the central Petén states; 2.) A more permanently settled refugium also fed by the collapse; 3.) A deliberate state-directed resettlement, perhaps by Calakmul; and 4.) Non-directed immigration by people attracted to La Milpa for their own individual reasons.

La Milpa grew to its height during the Late Classic II (Tepeu 2) period from about A.D. 650-750. During this time, Tikal and Río Azul also reemerged from their "hiatuses" (Adams 1999; Martin and Grube 2000). At La Milpa, much of the construction that is visible today was erected during Late Classic II including many elite residences both in the center and in the hinterlands, four minor centers were established in the cardinal directions, and successive sets of thrones were built in the South Acropolis (Hammond et al. 1998; Hammond and Thomas 1999). Household shrines were refurbished or built and benches were added to large residences, sometimes containing burials. Brett Houk (2003:60-61) argues, that based on similarity of site plans, the Late Classic La Milpa re-established Dos Hombres, perhaps as a way of "hiving-off" elites.

At least eight stelae were dedicated during the Late/Terminal Classic at La Milpa. The earliest two are stylistically dated to ca. A.D. 672. Both depict a king and the La Milpa emblem glyph, perhaps indicating its emergence as an independent power. Around that same time, ca. A.D. 690, Stela 2 was dedicated at Río Azul and it mentions a visit by a person from La Milpa. It may also be indicative of Río Azul's subordinate status or alliance with La Milpa (Adams 1999:103-105, 186-187; Robichaux 2000:39-43). The other six Late/Terminal Classic stelae all fall in the reign of King U'Kay. Stela 7 depicts U'Kay and was dedicated in A.D. 780. Four other carved stelae in site center also appear to either depict U'Kay or stylistically date to his reign.

At La Milpa, there is a resurgence of polychrome ceramics, mostly Palmar Orange-polychrome and Zacatel Cream-polychrome. As at Río Azul, there is a lack of the codex style pottery manufactured at Nakbe and found throughout the Calakmul regional state, but there are polychromes that are similar to those found at Holmul (Adams 1999:87-88), Tikal, and Uaxactun during Tepeu 2.

During Late Classic III (Tepeu 2/3) (ca. A.D. 750-830/850) (so probably during the reign of U'Kay) incised, gouged-incised, fluted, and/or grooved black wares (Cubeta Incised, Chilar Fluted, Torro Gouged-incised) are the dominant pottery of local elites. At Río Azul Adams states that, "Carved pottery, with an emphasis on hieroglyphs and geometrics…makes a strong appearance. Much of these ceramic materials comes from centers in the east in what is now Belize" (Adams 1999:89-90). The black slipped pottery forms include hourglass-shaped vases with pedestal bases, cylinder vases, cups, and flaring-sided and round-sided bowls. These locally produced wares filter down the social ladder much more than earlier polychromes, perhaps because much of the polychrome pottery at La Milpa was probably not locally produced. In fact, polychromes were always relatively rare at La Milpa and non-elites never seem to have had much access to them, unlike in the Petén.

Rice and Forsyth have recently defined a Terminal Classic Petén supercomplex that consists of "large bowls/basins, tripod dishes, and tall-necked jars, all usually red slipped with fairly standardized but minimal decoration" (2004:32). The eastern half of this

supercomplex is in the Eznab Sphere. They note that this supercomplex goes at least as far as Río Azul and perhaps into northern Belize (Rice and Forsyth 2004:32). However, Late/Terminal Classic La Milpa does not really fit into the Eznab Sphere. Large bowls and basins are common but occur in a wide range of slips most predominantly Rubber Camp Brown, the orange Paslow Variety of Garbutt Creek Red, Achote Black, and a slate-ware like cream that I have named Lemonal Cream. Tripod dishes of typical Petén style do not occur at La Milpa. However, a similar "grater bowl" form does appear slipped, either black or red. Finally, red tall-neck jars, common in Late Classic II are largely replaced by Lemonal Cream jars. Río Azul has many of these same types along with the typical Petén types and more Yucatecan types (Adams 1999).

There is evidence at La Milpa that a major construction program was underway when it was abandoned (Hammond and Tourtellot 2004). There is a radiocarbon date of ca. A.D. 790 that dates the infilling of Str. 38 in the Southern Acropolis prior to its last never-completed reconstruction (Hammond and Tourtellot 1999:2; 2004:293). La Milpa has a few scattered examples of fine orange wares, both imported and local/Belize versions. There is evidence that Río Azul, like Seibal and Altar in the west, was "overrun" by the Yucatec Maya around A.D. 840-850. However, it is unclear whether La Milpa was abandoned at that time, due to an incursion, or, perhaps was briefly occupied by a Yucatec contingent. Interestingly, the pottery and other evidence at Ixno'ha, much closer to the Río Hondo, indicates what may be a Terminal Classic resettlement by non-elites probably from the north (Gonzalez 2005; Sagebiel 2005)

So, what of Tourtellot's four hypotheses for La Milpa's increased population during Late/Terminal Classic? It is doubtful that La Milpa was settled by panicked migrants or as a refuge from the chaos of the Petén. The ceramic repertoire of Late/Terminal Classic La Milpa is different from that of the Petén and it appears to be locally developed. In fact, there is the possibility that surface manipulated black wares were produced in the La Milpa area and traded out to Río Azul and Blue Creek (Little et al. 2003:7). In addition, except for a lack of polychromes, the Late/Terminal Classic pottery is of reasonably high quality. There are berms in the hinterlands that may be territorial walls and/or soil and water control features but, otherwise, there are no clear defensive elements at La Milpa, which would be expected under this hypothesis.

Resettlement by Calakmul is also doubtful as, there are no indications in the material culture or written accounts that La Milpa or Río Azul was part of the Calakmul regional state. The final possibility of non-directed immigration seems most likely along with increased natural growth. However, Arlen and Diane Chase (2004:362) have recently argued that much of the pottery that is designated "Terminal Classic" may be limited to status-linked fine wares that do not necessarily trickle down to non-elites, therefore causing us to underestimate Terminal Classic populations. If true in the La Milpa area, this could be a second or even third time period when the non-elite population is undercounted. This, in effect, stretches the duration of the ceramically dated Late Classic II non-elite population at La Milpa through the Terminal Classic/Late Classic III, somewhat flattening the currently depicted dramatic population curve.

Conclusion

In conclusion, it is possible that the apparent fluctuations in La Milpa's population are due in part to its location at the border of the Tikal regional state. And,

it is possible that its population did swell and recede as it was pulled in and out of the current of socio-political events. However, it is equally possible that the ostensible boom-bust cycles are partly an artifact of other factors that need more investigation, such as how we recognize and date pottery, including lags in the variable adoption of pottery styles by elites and non-elites. There are also related issues of dating including, an uncritical reliance on cross-dating, a need for tighter control of local chronology through micro-seriation, and the need for continued evaluation of formation processes that might cause poverty and the lack of construction to masquerade as population loss.

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INTRODUCTION AND SYNTHESIS OF THE 2005 BELIZEAN ARCHAEOLOGY SYMPOSIUM

John Morris and Sherilyne Jones

Introduction

This set of papers marks the third volume of the Belize Archaeology Symposium devoted to archaeological research on the ancient Maya civilization in Belize. The papers included in this volume were all presented to the general public at the Belize Archaeology Symposium 2005 at the San Ignacio Hotel Resort, in San Ignacio Cayo. The 2005 symposium was divided into two parts: the Preclassic (Formative) Period and the subsequent transitions to the Early Classic; and Archaeological Research Reports that highlight current findings of the 2004-2005 archaeological field season carried out by principal investigators working in Belize. The volume is therefore divided into two sections.

Section One: The Preclassic (Formative) Period

In section one scholars present new and significant insights to the rise of ancient Maya civilization, but posit that many key questions remain unanswered. They emphasize that the trouble in identifying the period labeled Preclassic in ancient Maya culture history are beset by significant problems, the least being that most cultural remains from the Formative period are buried beneath centuries of accretional construction processes and excavations to locate deposits from this early time period has proven to be extremely difficult and costly.

Nevertheless in areas where Preclassic cultural material have been found analysis has provided scholars with information to be able to chart the outlines and the basic characteristics of what constitutes the Preclassic period. Obviously more research is required and the conclusions of most of the authors indicate that the period that is transitional between the Late Preclassic and the beginnings of the Early Classic (the enigmatic Protoclassic) needs further clarification. Two other problems that are highlighted were: First, the transitions from farming villages into an entity that can be labelled Maya also appear to be problematic. Secondly, a decline in population and economic activities during the transition from Late Preclassic to Early Classic may be due to continuity of material culture from one period into the other without any drastic cleavages in ceramic types, architecture, and ritual ideology. Therefore, under-representation of Preclassic and Early Classic sites may occur. Researchers are strongly urged to empirically test their assumptions archaeologically. These papers address the aforementioned concerns and also offer important resolutions to these issues.

The volume commences with Paul Healy's synopsis of the Preclassic in the Belize River Valley. Healy discusses the eexcavations carried out in the past two decades at the Maya centers of Cahal Pech, Pacbitun, and Blackman Eddy. He notes that initial settlements in the region took place in the centuries just prior to 1000 BC. But were these people Maya? In the succeeding millennium, the Preclassic period lowland

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populations at these sites according to Healy develop a complex, healthy, agricultural society with a burgeoning population, sophisticated technology, long distance trade networks, and an evolved artistic tradition, that were definitely Maya. Healy reviews the evidence for Preclassic Maya architecture, ceramic and lithic technologies, exchange, faunal, botanical, and osteological assemblages, as well as radiometric dating and concludes that by the terminal part of the Early Preclassic (ca. 1100/1200 B.C) the Maya had settled in the Belize Valley and that even by this early date there were signs of an emerging hierarchical society, so that the end of the Preclassic Period Maya economic and sociopolitical activities had become complex.

The research at Cahal Pech by James Garber, Jennifer L. Cochran and Jaime Awe further highlights the initial settlements at Cahal Pech and Blackman Eddy and confirms that these are two very early Maya settlements. Garber et al. note that excavations at the site of Cahal Pech and at Blackman Eddy have revealed a complex sequence of building episodes and ritual deposits initiated at the end of the Early Formative (1000 BC) and continuing for several centuries. These investigations revealed some of the earliest public architecture found to date within the Maya Lowlands and thus provide detailed information on the architectural configurations and the ritual behavior associated with the buildings. Early Middle Preclassic architecture at Blackman Eddy is robust with a triadic architectural complex, but at the end of the Late Preclassic the building was transformed into a two-tier edifice with painted masks. At the excavations in Plaza B at Cahal Pech, Garber et al. also located early Cunil Phase cultural materials and revealed a series of middle Formative structures. He notes that the presence of exotics in these early deposits indicates the participation in a long distance trade network by the ancient Maya at Cahal Pech and the emergence of social stratification.

Arlen and Diane Chase's discussion of the problems associated with identifying Preclassic remains at Caracol also demonstrate how difficult it is to locate these deposits buried underneath the massive buildings that make up Caracol's main plazas. This has caused a sampling bias with respect to any understanding of this critical time period in the site centre because early materials at Caracol are usually deeply buried beneath constructions that date to the Late Classic Period (post A.D. 550). However, the Chases note that a number of Preclassic constructions and deposits have been recovered during the course of 21 field seasons. These materials indicate that isolated house groups existed in Caracol's extensive settlement area from as early as 600 B.C. but most of the cultural deposits recovered from the site's epicenter date no earlier than 300 B.C. Preclassic caches recovered in Caracol's A Group, is associated with an early version of an "E Group" astronomical complex, and indicates that the Preclassic site was "centered" there. Towards the end of the Preclassic however, this focus may have shifted to Caana, whose height by A.D. 150 was over 34 meters. Arlen and Diane Chase also point out that the inhabitants of Late Preclassic Caracol had access to widespread trade contacts and that caching contents and practices were impressive and precocious.

Shifting our focus to the northern half of the country, Robert Rosenswig's paper explores the transition in Mesoamerica from sedentary and simple village life to full-scale agriculture and socio-political complexity. He does this by analyzing and comparing the archaeological and environmental records of the Soconusco and northern Belize from 3000-800 BCE

(uncalibrated) that is relevant to food production and human alteration of local environments. The Chantuto A and B phases known from shell mounds at Cerro de Las Conchas and Vuelta De Limon and the deposits at Caye Coco and Progresso Lagoon sites in northern Belize represent the first and last areas of Mesoamerica where the Late Archaic to Formative transition occurred. Rosenswig evaluates the different adaptive trajectories in these two lowland regions in terms of how the inhabitants of each area responded to the end of a world-wide drying event that lasted from approximately 1800-1600 BCE (uncalibrated), known in the Old World as the "4200 BP Event". He states that both regions experienced a "push" to agriculture at approximately the same time as environmental conditions improved after a hiatus in plant utilization brought about by this world – wide drying out period.

The subsequent five papers also seek to advance our understanding of the Preclassic time period in northern Belize by providing specific case studies that illustrate different methodologies and strategies, designed to identify and classify precise categories of Preclassic material culture and how transitions to the Early Classic may have occurred. Lauren Sullivan and Fred Valdez Jr. survey data in the Three Rivers Region identifies that there was continued use of Late Preclassic ceramic types into the Early Classic and that during the Late Preclassic population movements from the site centres to the hinterland was the norm. They argue that the transition from the Late Preclassic to Early Classic represents a time of political transformation for the Maya with many dominant sites of the Late Preclassic (such as El Mirador and Cerros) declining in power while other sites flourished (such as Tikal, Uaxactun, and Rio Azul). Thus, a more comprehensive understanding of this complex time period is essential. The paper then focuses on trends in ceramic characteristics that continue from the Preclassic into the Early Classic, the most pronounced of which was the use of a waxy Sierra Red-style slip into the Early Classic. The potential for complicating and/or obscuring identification of Early Classic occupations are subsequently delineated.

Diane Z. Chase and Arlen F. Chase study of the Preclassic at Santa Rita Corozal is one example where material culture of the Preclassic period is well defined. Although the site of Santa Rita Corozal is best known for its Postclassic Period (A.D. 1100-1532) remains, a substantial number of Preclassic deposits were recovered during the course of archaeological investigation. Santa Rita was a relatively small site throughout the Preclassic Period; yet, it is a site that had access to many long-distance trade goods. These materials spanned the entire Preclassic era from ca. 1000 B.C. through the transition into the Early Classic Period at about A.D. 250. This paper presents the data and examines relationships to other Preclassic materials in Belize particularly the relationship with Swasey ceramics. The archaeological data presented here have a significant bearing on the rise of Maya civilization in northern Belize because of the variability that existed in ceramic materials prior to the onset of the Late Preclassic Period.

In a study that combines ethnohistorical and archaeological data Rissa M. Trachman's paper elaborates on the analysis of gender at the Dancer Group households at the site of Dos Hombres. Three sets of multiple burials were excavated of which two of these sets of burials date to the Chicanel phase (400 BC - AD 100) of the Late Preclassic. Several of the individuals interred in the Preclassic at this household were sub-adults buried with grave goods of greenstone, shell, and whole vessels. Trachman outlines our

misconceptions on gender issues and then focuses on specific gender identifying symbols that may be present in this set of burials. She points out that Landa (Tozzer 1941) noted that children were socialized as to their gender with specific artifacts such as shell pendants for females at a very young age. Continuity and possible clarification of this ethnohistoric documentation is addressed along with published comparative data from the central lowlands. The Dancer Group mortuary deposits contained bivalve shell that allows us to identify the skeletal remains as female children. From this it is clear that the costume ornaments that Landa described in colonial times were also used in earlier periods to socialize Maya children's gender identity. Trachman argues that this specific practice of symbolic gender costume ornaments for children found in the Late Preclassic, Terminal Classic and in the Colonial Period suggests a measure of continuity.

Jason Barret examines the nature of long distance trade at the ancient Maya site of Blue Creek. This paper draws on research carried out at the site of Blue Creek, Belize from 2000-2003 focusing on the consumption of stone tools. Due to their preservation, and ubiquity at ancient Maya sites, and essential economic importance, stone tools represent significant, and often underutilized, markers of economic activity. Barret notes that at Blue Creek, of particular interest is the high number of tool forms imported during the Late Preclassic period from production zones in northern Belize, presumably from specialist workshops at the site of Colha. He points out that nearly half of all tool forms recovered in Late Preclassic deposits at Blue Creek came from northern Belize workshops via long-distance exchange. Only a small percentage of the tool forms recovered in Late Preclassic deposits at Blue Creek come from resources within the settlement zone, with the remainder obtained through intra-regional sources. He proposes that while Blue Creek was reliant on imported stone tools almost from its inception as a community, the site's location offered several important strategic advantages that made this relationship tenable. Blue Creek location at a strategic point on the furthest navigable point on the Rio Hondo, a waterway believed to have served as an important commercial route from Late Formative through Early Classic periods ensured regular resource availability for its inhabitants. Barret also suggests that the quantity and dispersion of imported tool forms in Late Preclassic deposits at Blue Creek argues convincingly for the presence of markets at this early stage. His paper re-examines the economic interconnectedness of producer and consumer sites during the Late Preclassic and challenges the simplicity of distance-decay models of utilitarian resource distribution.

We conclude this section by an article that serves to provide additional data for the Late Preclassic period especially, given the fact that the site of Lamanai was central for the development of an initial understanding of the Late Preclassic. Terry G. Powis, Linda Howie and Elizabeth Graham combine technological studies such as, thin section petrography, residue analysis and other macroscopic and scientific techniques, with analytical synopses of the type:variety mode system to analyze ancient Maya ceramics at Lamanai. Powis et al. demonstrates that thin section petrography offers the opportunity to examine and characterize compositional variability, on the microscopic level, as it relates to paste technology and provenience. This analytic technique was applied to a sample of Late Preclassic and Protoclassic sherds recovered from a number of primary contexts at Lamanai. He argues that integration of the petrographic and stylistic data provides a better understanding of local pot making

activities, as well as Maya ceramic technologies, in general. Powis also attempts to reconstruct regional- and local-patterns in the production, consumption, and circulation of pottery items at Lamanai concluding that many of the ceramic wares came from within the region.

The papers presented in this section all attest to a surprisingly early development of Lowland Maya civilization in the Belize area. Early patterns of monumental sculpture, iconography and public architecture are among the earliest evidence of centralized power among the Lowland Maya, emphasizing that the beginning of ritual and political activity at these sites reach as far back as the Middle Preclassic period.

Section Two: General Research Papers

In this section we have placed the special reports of archaeological research carried out by foreign funded projects in Belize. As in the previous volume we present the papers by region, first commencing with the western part of the country, the Cayo district, followed by the southern district of Toledo and the central/coastal Belize district area. We then shift focus to northern Belize where major research has been undertaken as part of a regional research program.

Western Belize: Cayo District

The western region of Belize especially the Cayo District has seen a tremendous growth in archaeological research in the last decade. The seven papers that follow examine a wide range of social and political analyses including the lives of ancient Maya agricultural farmers and the activities of the Maya elites. The first paper by Gyles Iannone documents an unusual activity in the Terminal Classic at the site of Minanha, which is located in the North Vaca Plateau of west-central Belize. The investigations into a buried royal court highlight the level of political turmoil experienced by the ancient Maya during the Terminal Classic period. Minanha participation in the socio-political events between what were once two very antagonistic political entities, the Caracol and Naranjo polities resulted in dramatic changes in its culture history trajectory. Iannone documents that for much of its history, Minanha was a small, primarily rural community but that during the 8th century, it was rapidly transformed into the seat of power for a lesser order city-state. Minanha's period of florescence would, nevertheless, be brief, a fact which is most dramatically expressed in the burial of its royal residential courtyard beneath five meters of rubble sometime during the 9th century. The paper details the more site-specific implications of the data connected to the construction, use, and eventual burial of this royal residential courtyard, and also the broader significance of these data with respect to what they tell us about political interaction on the regional scale during the Late Classic (675-810 A.D.) to Terminal Classic (810-900 A.D.) transition.

Andrew R. Wyatt examined agricultural terraces and household and community activities at Chan, an ancient Maya farming community located in west-central Belize, which was occupied continuously from the Middle Preclassic to Early Postclassic periods (ca. 900 B.C. – A.D. 1250). Excavations on these terraces have revealed new information regarding ancient Maya agriculture practices. Wyatt reveals that an earlier date for the construction of these intensive agricultural strategies than previously established, as well as evidence of irrigation and other hydraulic features such as spring-guided dam suggests that our models of Maya agriculture need to be refined through extensive excavation and the recovery of empirical data. This new data also suggest that agricultural terraces were

constructed independent of the population increase in the Late Classic and were built without the input of external influence from larger, nearby sites.

Christophe Helmke's research at Pook's Hill was initially designed to provide a backdrop of knowledge on surface sites, which could be utilized to assess ritual activities conducted in nearby caves by the ancient Maya. But surprisingly the four years of excavations have produced a wealth of information that surpasses the author's initial modest aspirations. The paper presents a synopsis of the 1999 through 2002 seasons of archaeological investigations conducted at the site. Provisional analyses focused in particular on the special deposits (burials and caches), the archaeological deposits ('terminal occupation debris' and 'lenses'), the architecture (eastern shrine and sweatbath) and the fragmentary hieroglyphic texts discovered there. The sweatbath, a special function architectural feature shared similarities to a sweatbath found at Piedras Negras. His discovery of partial glyphic inscriptions on Moulded carved vase fragments share affinities to a historical figure named *Olom* dating between A.D. 810 and A.D. 830.

Anabel Ford and Keith Clarke in an innovative use of GIS technology attempt to combine the power of GIS and statistical modeling to predict the distribution and number of Maya settlements from the subset of known sites from the Belize River Archaeological Settlement Survey. They argue that at the peak of the Maya civilization, between 600 and 900 A.D., the population density of the greater Petén region of Northeastern Guatemala and Western Belize has been estimated to be up to nine times that of today with densities speculated to be 1000 persons per sq km and growth rates up to 2.5% per annum. A vast and complex system of "urban" centers developed that included the huge city at Tikal at one end of the continuum of settlement down to thousands of household farms with isolated buildings interspersed across the landscape. Ford and Clarke argue that our incomplete record focuses on only a fraction of the Maya settlements that have been mapped and analyzed which provides a base for understanding Maya patterns of land use. Based on this record, we apply research methods that can help us understand how the ancient Maya utilized and conserved their landscape. Their modeling exercise however, allows researchers to also test the model in the field, to evaluate environmental constraints on Maya settlement, and to create a map showing those regions worth conserving with numerous Maya settlements.

The remaining three papers for the Cayo District address specific issues of ideology and socio-political concerns of the ancient Maya demonstrating how elites attempt to manipulate an ever- increasing sophisticated populace. The utility and importance of water from an ideological perspective by focusing on the Water Lily symbol is the central idea of Reiko Ishihara et al. paper. The authors argue that as a basic component of survival, water is a primary concern and integral part of any society. The Maya area was no exception to this rule, and scholars in this sub-region of Mesoamerica have spent considerable effort addressing the paradox of large populations in areas with limited surface water sources, particularly in the Northern Lowlands. This concern is further highlighted by ethnographic studies, which have noted the religious significance of water and the establishment of deities and rituals related to this basic human need. An excellent example of the above is the association of water-related icons with religious ideology. The authors examine the iconography of the stucco façades that flank either side of the

central staircase of Structure B5-sub at Caracol and suggest that the masks represent the Water Lily Serpent, an important but little studied deity. These masks identify the building as a water temple, which is a part of a more widespread pattern throughout the Maya area.

Holley Moyes drawing on extensive cave studies carried out by the Western Belize Regional Cave Project documents a hiatus in cave use at Chechem Ha, located in the Belize Valley. Moyes point out that cave studies have traditionally relied heavily on ethnographic or ethnohistoric analogy to portray the sacred context of Mesoamerican usage of the caves. What is little understood she proposes are the behavioral processes that produced the artifact assemblages in caves and the nature of the relationship between caves and their ancient users residing in surrounding surface sites. This study demonstrates that caves can provide information that is useful in broader research arenas. A Late Classic hiatus in cave use at Chechem Ha is described and correlated with regional socio/political stress between the ancient Maya polities of Naranjo and Caracol. This correlation demonstrates that caves were not just venues for worshipping rain deities but were important political spaces that required protection from enemies.

Joanne P. Baron's excavations of the ballcourt at Yalbac has revealed its Late Preclassic origin and explored its relationship to an adjoining pyramidal structure. The data, obtained from the 2004 and 2005 excavation seasons of the Valley of Peace Archaeology project, details the chronology of the Yalbac ballcourt and indicates that it is representative of ballcourt construction in two of the neighboring areas of the Belize River Valley and the Three Rivers Region. The ballcourt's early construction, termination, and Late Classic revival are indicative of Yalbac's interaction with other polities. Additionally, the important religious and ceremonial nature of Maya ballcourts is demonstrated at Yalbac by the ballcourt's relationship to the site's largest pyramidal structure. In its Late Classic phase, the ballcourt obstructed this structure's axial stairway and access to the plaza below. It is hypothesized that the use of this arrangement was due to the ritual significance of the ballcourt's location, which could not be moved. Ritual and worship play an important role in people's lives and whether these are conducted at private shrines, in public or in grandiose churches or temples, these behaviours reflect religious expression and experiences.

Southern Belize: Toledo and Stann Creek District

The first paper by Heather McKillop, presents an analysis of the role of salt workshops and her re-examination of the political economy of the ancient Maya. In this paper she reports the 2004 discovery of 33 Late Classic Maya salt works (A. D. 600-900) in Paynes Creek National Park on the south coast of Belize, including one with the first-known ancient Maya canoe paddle. Sea-level rise submerged the salt works, which are now underwater in Punta Ycacos Lagoon. Twenty-three of the salt works have wooden buildings preserved below the sea floor. The discoveries add important empirical information for evaluating the extent of surplus salt production and river transport during the height of Late Classic civilization in the southern Maya lowlands. The discovery of a wooden canoe paddle from one of the Paynes Creek salt works, Ka'k' Naab,' ties the production of salt to its inland transport by rivers and documents the importance of canoe trade between the coast and the interior during the Late Classic.

Very few sites dating to the Late Preclassic and Early Classic periods in southern Belize have been defined, and to

some extent was deemed to not have existed. Keith Prufer, Andrew Kindon and Phillip Wanyerka provide a critical regional view from the site of Uxbenka, Toledo. Archaeological and epigraphic data now emerging indicate that the site of Uxbenka was a formidable centre in the Late Preclassic and Early Classic and linked to the dominant polities in the Peten. Uxbenka appears to be the earliest known centre in southern Belize. This chapter discusses recent archaeological work conducted at the site, which is moderately sized and located in the foothills of the Maya Mountains in the Toledo District of southern Belize. Epigraphic data indicate that it was settled around AD 250, a time of expansion of political influence from Tikal, with whom Uxbenká may have been aligned. Uxbenká was occupied until around AD 900. Research in 2005 provided data that Uxbenká is considerably larger than previously thought. The site has several large plaza groups with restricted access and monumental architecture. There are also at least two ballcourts at the site. New monuments discovered in 2005 confirm that Uxbenka has an Early Classic component. These data suggest that Uxbenka is the earliest site in southern Belize that had carved stelae and may have been well established as a secondary Maya capital by the mid-fifth century AD.

As we move further south to the remote site of Pusilha, Geoffrey E. Braswell and Sherry Gibbs present new data that raise stimulating inquiries concerning the culture history of the region. Recent excavations at the site of Pusilha, Belize have revealed a diverse material culture assemblage that raises more questions than answers with regard to the occupational history and development of the Southern Belize subregion. Since 2001, the Pusilha Archaeological Project (PUSAP) has studied the growth of one such site in the southeastern periphery of the Maya world. Braswell and Gibbs suggest that the inhabitants of the site of Pusilha may have come from the southern Petén at or shortly before the beginning of the Late Classic period. Their data are drawn especially from excavations conducted during the 2004 and 2005 field seasons, from which they located several burials, including a royal tomb. The individual buried in the tomb may have had affiliation with the site of Teotihuacan in central Mexico because three jade pendants accompanying the burial exhibit characteristics similar to Teotihuacan stylistic conventions.

Central Coastal Region: Belize District

The following paper presented here deals with the central coastal areas, particularly along the Sibun drainage and the areas associated with its headwaters and its subsequent meander towards the Caribbean Sea. The Xibun Archaeological Research Project (XARP), headed by Dr. Patricia McAnany of Boston University, has documented a rich historical profile for the area. Eleanor-Harrison-Buck, one of McAnany's graduate student has been investigating the Terminal Classic occupation in the Sibun River Valley, Belize as part of her doctoral dissertation. New data from recent excavations indicate that political influence over the valley was actively contested at the end of the Classic period. The influence of the Peten dynasties-attested in ceramics and architecture-appears to have been challenged by the influence and power exerted by the northern Yucatec region, likely Chichen Itza. Changing patterns of ceramics, ritual architecture, and mortuary practices reveal the political re-orientation of the Sibun valley inhabitants. During the Terminal Classic period (ca. AD 800-1050), political powers collapsed in the "Maya heartland" of Petén, Guatemala, and important centers,

such as Chichen Itza, extended their power base outside of northern Yucatan. An expanded trade network along the Caribbean coastline - possibly administered by Chichén Itza - provided multiple points of entry to coastal and riverine settlements in Belize. In this way, northern influence appears to have spread to the Sibun Valley in the mid-section of Belize - over 350 km south of Chichen Itza. At three sites in the Sibun valley - Pechtun Ha, Oshon, and Obispo - circular-shrine structures were constructed, resembling smaller versions of the Caracol at Chichén Itzá, and these highly patterned constructions are thought to have served a ritual purpose.

Northern Belize: Orange Walk and Corozal District

Darcy Wiewall and Norbert Stanchly's endeavor to reconstruct the gendered relations of production involved in preparation and procurement of animal resources from commoner household contexts at Lamanai during the Late Postclassic-Colonial transition. They argue that studies in the Maya area rely too much on Spanish colonial documents, which has hindered understanding of local producers and communities and encouraged limited views of pre-Columbian commoner households. Current investigations at Lamanai have focused on how commoners actively participate in the process of culture change. Specifically, how they organized household production and gendered relations in response to the demands of the Spanish State. Analysis of multiple lines of archaeological materials suggests that households were responding with a number of different strategies. In their reconstruction they provide a holistic view of Maya gender relations of production that includes all potential actors who contributed labor to the household: men, women, children, and elders.

Other research in northern Belize has focused primarily on large-scale settlement pattern studies over a wide area known as the Three Rivers Region. The 2004 and 2005 field seasons of the Programme for Belize Archaeological Project (PfBAP) under the direction of Fred Valdez has investigated many sites within this region and expanded on research interests. Among these were small rural and household studies such as the Medicinal Trail Site and escarpment settlements. The discoveries of significant architecture, agricultural innovation, and economic activity at these "commoner" settings are described and placed into a regional context. Continued excavations at larger sites in the PfBAP's project area are also discussed as related to the general political landscape. How each of these investigations ties into the Maya occupation (chronology), is explored from the regional perspective.

Within the Three Rivers Region lies the major centre of La Milpa. Kelly Sagebiel study informs us that the variable impact on La Milpa's political and socioeconomic fortunes resulting from the interrelated factors of its frontier status, population shifts, and political agency were investigated using the evidence from the ceramics as well as other material culture uncovered during the La Milpa Archaeological Project, Norman Hammond and Gair Tourtellot between 1992-2002, as well as the Maya Land and Water Use Project, under the direction of Vernon Scarborough, Nicholas Dunning, and Fred Valdez, Jr. and carried out between 1997-1999. The site of La Milpa, located in northwest Belize, had a long but uneven history. Occupied from at least the Late Preclassic to the Terminal Classic, its position on the landscape is somewhat unusual for such a large city. Its position in the border region between the major states of Tikal, Calakmul, and Caracol gave it strategic significance. As a result, La

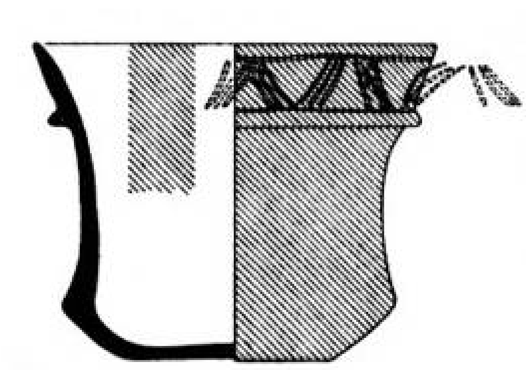
Milpa was alternatively drawn into the political spheres of these states, although, at times, it was independent.

Another large centre that lies within the Three Rivers Region is Gran Cacao. Jon Lohse and Kerry L. Sagebiel carried out investigations at the ballcourt of the site of Gran Cacao, northwestern Belize (Figure 1), during the summer of 2004. A medium-sized site, Gran Cacao was recorded in 1993 by the Programme for Belize Archaeology Project (Adams 1995). Based on analysis of looted vessels and exposed stratigraphy, the site's occupation spanned from at least the Middle Preclassic perhaps until the early Postclassic. The 2004 excavations in the ballcourt focused on issues such as intra-community relationships involving both faction-building and creation of social distance through reifying status differences, as well as Gran Cacao's integration into a regional network of communities that interacted with each other through ballgame ceremony and competition. Results of these investigations will not only help shape the view of Gran Cacao's position in the regional political landscape, but also advance the general understanding of dynamics and tensions between political actors sponsoring public rituals and community members who participated in these events.

We end this volume by presenting a paper that seeks to explain migration patterns in Northern Belize during the Terminal Classic. Josalyn Ferguson's work at Strath Bogue in Northern Belize demonstrate that it is one of the regions within the Maya subarea that did not experience catastrophic decline and abandonment associated with the infamous Maya collapse. Many scholars have argued that this region was partially populated, and further settled by factions of migrating groups during the Terminal Classic Period (A.D. 750-1050). Archaeological evidence at many sites in northern Belize support this hypothesis as they witnessed dramatic growth, as seen through the expansion of settlements and increases in construction episodes, while others, such as the Strath Bogue site, were newly settled. Recent investigations here have sought to examine and reconstruct developing community patterns and processes of culture change and migration in light of social and political transformations associated with the Maya collapse.

To conclude, and as promised, the Institute of Archaeology has published the third volume of research papers on archaeological findings in Belize. The diverse nature of topics discussed in this volume underscores the complexity of archaeological research both theoretical and methodological. Archaeological research in Belize continues its phenomenal growth and it is the mandate of Institute of Archaeology to publish the findings of these scholarly presentations in a scientific journal, to provide knowledge not only for the Belizean public, but to all those interested in the past histories of ancient civilizations.

SECTION ONE: THE PRECLASSIC (FORMATIVE) PERIOD



1 *PRECLASSIC MAYA OF THE BELIZE VALLEY: KEY ISSUES AND QUESTIONS*

Paul F. Healy

Recent archaeological investigations in the Belize River Valley provide new, and significant, insights to the rise of ancient Maya civilization, but many key questions remain unanswered. Excavations in the past two decades at the Maya centers of Cahal Pech, Pacbitun, and Blackman Eddy, document the initial settlement of the region in the centuries just prior to 1000 BC. In the succeeding millennium, the Preclassic period lowland Maya at these sites develop a complex, healthy, agricultural society with a burgeoning population, sophisticated technology, long distance trade networks, and an evolved artistic tradition. Evidence for Preclassic Maya architecture, ceramic and lithic technologies, exchange, faunal, botanical, and osteological assemblages, as well as radiometric dating, are reviewed. Issues requiring further research are highlighted.

Introduction

Investigations by archaeologists in the past two decades have revealed that many of the hallmarks once attributed to the Classic (AD 250-900) period Maya have much greater antiquity than previously assumed, and actually had their origins in the preceding, but poorly understood, Preclassic (2000 B.C. - A.D. 250) period (Demarest 2004; Martin and Grube 2000; McKillop 2004; Sharer 1994). In particular, there are strong indications that the Maya made the transition from a relatively egalitarian society to a ranked, stratified one during the Preclassic period (Guderjan 2004; Hammond 1986, [Ed.] 1991; Healy and Awe [Eds.] 1995, 1996; Healy [Ed.] 1999; McAnany 1995, McAnany [Ed.] 2004). This was an extremely important process in Maya history.

The Preclassic period is a very long time span, roughly three times longer than either the succeeding Classic, or Postclassic, period. Despite its length, the Formative period also remains one of the most enigmatic and controversial eras in the history of the ancient Maya. That this period is less well known becomes obvious when one examines, for example, a recent synthesis on Maya archaeology entitled *The Ancient Maya: The Rise and Fall of a Rainforest Civilization*. Demarest (2004), not surprisingly, devotes the vast bulk (>60%) of his text to the Classic period Maya, and only a small fraction (about 10%) to the Preclassic Maya.[1] While Demarest's book is the most recent treatment to show this bias, it is not much different (in the proportion of content dedicated to the Preclassic Maya) than other, similar overviews. Is this an accurate portrayal of what we know about the earliest Maya? The answer is "yes", but with the important caveat that the situation is improving. Furthermore, investigations in the Belize Valley, in particular, are helping to correct this long-standing imbalance in reporting and information.

While there have not been as many detailed, large-scale, studies of Preclassic Maya sites, as we have seen for Classic centers, several sites in Belize (Cerros, Colha, K'Axob, and Lamanai), Guatemala (El Mirador, Nakbe), and Mexico (Becan, Dzibilchaltun) have generated useful data on the Preclassic Maya. The site of Cuello (Belize), in particular, has produced crucial details on the Middle and Late Preclassic Maya (Hammond [Ed.] 1991; Healy 1993). Nevertheless, there remain many more

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questions than answers about the Preclassic Maya cultural development. That was the impetus, and context, for the initiation of several multi-year research projects on the Preclassic Maya of the Belize River Valley during the 1990s, at Cahal Pech (Awe 1992; Awe et al. 1990; Garber et al. 2005; Healy et al. 2004a), Pacbitun (Healy 1988, 1990, 1992; Healy [Ed.] 1999; Healy and Awe [Eds.] 1995, 1996; Healy et al. 1990, 1995, 2004b), and Blackman Eddy (Brown 2004; Brown and Garber 2005; Garber et al. 2004a, 2004b, 2004c). I will focus on that research, examine several major questions still facing us, and try to answer these queries based on what is known, or surmised

Research Questions Pertaining to the Pre-Classic Maya of the Belize Valley

Chronology

When were the earliest permanent settlements established in the Belize Valley? Research at Cahal Pech and Blackman Eddy has been consistent on this. Both sites have produced very early radiocarbon dates, and some of the oldest dated remains from anywhere in the Maya lowlands. This was an important discovery, by itself, because it pushed back the date of initial human settlement by about four centuries and established, beyond doubt, that riverine settings, like the Belize Valley, were early, and very attractive, environments for Preclassic farming populations.

There are now over three dozen radiocarbon and accelerator mass spectrometry (AMS) dates, which span the entire Preclassic period, derived from these three sites alone (10 determinations from Cahal Pech, 13 from Pacbitun, and 15 from Blackman Eddy)(Garber et al. 2004a: Table 3.2; Healy 1999:Table 1; Healy et al. 2004a:Table 7.1). The earliest of these dates (1040 +/-60 b.c.; Cal BC 1295, @ 1-sigma), at Blackman Eddy, falls in the second millennium BC, in the terminal part of the Early Preclassic period. Cahal Pech has a nearly identical early date (980+/- 50 b.c., Cal. BC 1200, @ 1-sigma). These determinations from the Belize Valley match the earliest accepted dates (900-1300 BC, Phase 1A) from Cuello, in northern Belize (Hammond 1991:57).

With few exceptions, all of the recently generated Belize Valley dates occurred exactly as expected. One of the exceptions (from Cahal Pech) produced a very early date (Cal BC 5600) from a charcoal sample, and did not fit the Middle Preclassic context. As such, it is unacceptable. However, it does raise the question of whether there was a much earlier human habitation (prior to the Preclassic period) in the Valley. Elsewhere in Belize, Archaic and Paleo-Indian period projectile points have been recovered, though rarely with secure archaeological contexts (Hester et al. 1981; Kelly 1993; Lohse 2005). We need to seek out and recover more information about both Paleo-Indian and Archaic horizons from Belize, and the lowlands in general. We know, from scattered, isolated finds, that these earliest inhabitants of the lowlands were present in Belize, but presently there is insufficient evidence upon which to build credible scenarios about the lifestyle of these early hunter-gatherers. The new radiometric determinations have clarified considerably the early chronology for the Belize Valley and demonstrated, unequivocally, that the ancient, settled peoples inhabited this fertile region over 3000 years ago, earlier than previously recognized. Three decades ago, Dennis and Olga Puleston (1971) hypothesized that the earliest permanent Maya settlements would

most likely be found along rich river valleys of the lowlands. The recent chronological data from the Belize Valley certainly supports that theory.

Ethnicity

Who were these early settlers of the Belize Valley? Joe Ball and Jennifer Taschek (2003), in a recent, thought-provoking paper based on analyses of some of the early pottery from Cahal Pech, and several other sites, argue that Belize Valley Preclassic settlers may not have all been Maya (or, even more provocatively, not Maya at all). They suggest, instead, that a separate, distinct ethnolinguistic group (non-Maya speakers) may have existed in the valley (Ball and Taschek 2003:187). By the Protoclassic period, however, they believe that these early people (or groups of people) had amalgamated to become the Classic Maya of the Belize Valley.

Ball and Taschek (2003:181) question the widely-employed James Gifford (1976) ceramic typology and sequence (what they term the "Barton Ramie Paradigm"), arguing that they recognize enough differences and anomalies to challenge the conventional wisdom of the ethnic identification of the earliest settlers. They label their conclusions as "tentative" and "subject to significant modifications", characterizing the article as "intended more as a stimulus to…future research…(not) as some new 'final', alternative interpretation…" Indeed, they temper their remarks, somewhat, by accepting a counter-argument that in the Middle Preclassic there may have been two distinct Maya languages in use in what is today Belize. One of these was spoken by Formative settlers in the north (representing the Swasey-Bladen-Mamom Maya) and another in the Belize Valley (representing the Jenney Creek/Kanluk-Barton Creek/Xakal Maya).

This is a fascinating idea. If the first settlers to the Belize Valley were not Maya, then who were they? Ball and Taschek (2003:182) suggest the Mixe-Zoque (of the Isthmus of Tehuantepec region) may have pioneered settlement in the lowlands and, particularly, in the Belize Valley. The notion of a transplanted population settling very early in the Belize Valley has been floated before, by Gifford himself (1970; Sharer and Gifford 1970). He suggested a group from the Southeast Maya highlands (El Salvador) was responsible for Jenney Creek (and Xe) settlements in the Maya lowlands. Of course, Gifford saw these early migrants to (what is today) Belize as being of Maya ethnicity (not Mixe-Zoque). But others, for example Andrews (1990), suggested the Mixe-Zoque as a possibility. We need to be careful to not over interpret ceramics. As one investigator wrote recently; "Many theories have gone too far in seeing the spread of ceramic forms and art styles as indicators of the success and physical expansion of hypothetical ethnic and linguistic populations. Such "ethnic" interpretations of ceramic or artifactual similarity ignore the many alternative mechanisms for the dissemination of styles and technologies between peoples (Demarest 2004:60). While the writer may not have had the Ball and Taschek model in mind when writing these remarks, the gist of the statement is certainly germane in this case.

So far, I must admit to being *un*convinced of the Mixe-Zoque argument. But, what is needed to settle this debate is for a team of specialists to examine carefully, in a side-by-side comparison, the Early-Middle Formative Mixe-Zoque (Isthmian) ceramics and coeval (Cunil/Kanocha-Jenney Creek) pottery from the Belize Valley. In my opinion, admittedly based primarily on

published descriptions and illustrations, these assemblages are different and others (more familiar than I with both Mixe-Zoque and Maya Formative wares) indicate that the two classes of pottery are distinct (D. Cheetham, personal communication, 2004). I think that the Mixe-Zoque theory needs to be more thoroughly tested.

When discussing the strengths and weaknesses of working with ceramics, I warn my students that it is risky to equate pottery types (or styles) with cultures, yet it is a common practice. Indeed, Payson Sheets (2006:117) notes that “One of the more difficult challenges in archaeology is determining the ethnicity of the people who lived at a site..”. I have (elsewhere) attempted to link a ceramic assemblage with a particular Native group (for example, my study of the Nicarao in southwest Nicaragua; Healy 1980). Many archaeologists regularly do this. However, we normally have much more data to make the linkage than has been demonstrated for the Formative in the Belize Valley. In the case of the Nicarao, for instance, I worked with not only the ceramic assemblage (>27,000 specimens), but also the lithics and other material culture, and a very detailed ethnohistoric record (the Nicarao likely migrated to Pacific Nicaragua sometime between AD 1200-1500 from central Mexico, much closer to the Historic era than the Formative cultures of the Belize Valley, and there are detailed oral histories recorded for this). Sheets, working with an extraordinarily well preserved material culture at Ceren (El Salvador), *struggled* with an ethnic identification for this site (ultimately favoring a Maya designation rather than Lenca), and he had enormously well preserved assemblages to guide him.

Ball and Taschek (perhaps due to limitations of space) do not discuss non-ceramic assemblages (except for some brief references to Olmec-like objects found in the Maya lowlands). But, from what I have seen, there is nothing in the non-ceramic material culture of the Belize Valley which connects these earliest settlers to the Mixe-Zoque. On the other hand, there are remains (architecture, lithics, faunal selection, etc.) which support a continuity to the later Classic lowland Maya culture. As for the pottery, we see some mixed Cunil-Jenney Creek ceramic deposits (recovered from just above pure-Cunil levels) at Cahal Pech with clear (and I would say quite indisputable) Maya ceramic types. If I understand them correctly, Ball and Taschek see these same sherds as being imported (trade) wares from the Maya elsewhere.

In sum, I do not see the earliest wares of the Belize Valley as “exotics” and evidence of, say, Mixe-Zoque settlers. Nor do I view the pottery as so divergent (from later Maya types) as to warrant a label as non-Maya. Given what we know about the subsequent six-centuries of Maya habitation (and the accompanying Late Preclassic culture) in the Belize Valley, I do not think it unreasonable (and certainly not a “knee-jerk” reaction) to suggest that these earliest inhabitants were more likely Maya-speakers than any other group. I would accept that the earliest ceramics in the Valley (Cunil at Cahal Pech, Pacbitun, Xunantunich, and Kanocha at Blackman Eddy) are sophisticated and more elaborate than incipient, experimental wares might be. I presume that this is because we still do not have (in hand) the earliest Maya pottery from the lowlands.

Until we have a definitive, detailed study of a larger sample of Early-Middle Preclassic pottery from the Belize Valley to compare with isthmian wares of this same early era, this debate is likely to continue. Ball and Taschek have produced a thought-

provoking paper that has already generated considerable debate and scholarly discussion. Their illustrations and treatment of the early Belize Valley pottery are valuable contributions.

Architecture

What kind of architecture was built by the Maya of the Valley and how did it evolve during the Preclassic period? The long-term investigations at all three Valley sites discussed here indicate a gradual evolution of the domestic and ceremonial architecture during the Preclassic. As at Cuello, there is a progression from solely domestic structures (perishable pole-and-thatch dwellings) to more complex and diversified architecture, including increasingly large religious platforms and, by the Late Preclassic, modest temple-pyramid structures (Gerhardt 1988; Hammond 1991 [Ed.]). It is also known, from other parts of the Maya lowlands, that some ambitious late Middle Preclassic architecture was being erected at Nakbe (Guatemala) and some of the largest examples of Maya architecture ever built (rising 30-40 m tall) were raised in the Late Preclassic at sites like El Mirador (Matheny 1993) and Lamanai (Pendergast 1981).

Large scale, horizontal excavations at both Cahal Pech (Tolok and Cas Pek settlement groups) and at Pacbitun (sub-Plaza B), have revealed considerable new evidence about Middle Preclassic architecture. At Pacbitun this includes orderly alignments of stone foundations to quadrangular structures, often clustered in hamlet-style patio groups and, at Cahal Pech, quite contrasting circular platform structures that were centrally located in plazas (Aimers et al. 2000; Hohmann and Powis 1996, 1999; Powis 1996).

By the Middle Preclassic period the Maya had developed some sophisticated techniques for building in a variety of different forms, creating structures at least 10m long, and filling low, raised platforms with specially-built construction pens (Lee 1996; Lee and Awe 1995). The circular platforms at Tolok, near Cahal Pech, were relatively large (ranging from 9-15 m in diameter), were well built (plaster covered), and (in some cases, at least) lacked superstructures. It has been argued that such uncovered circular structures were employed as ritual or ceremonial platforms. The builders and users of such round structures presumably resided in perishable dwellings atop nearby quadrangular platforms (Powis 1996; Powis and Hohmann 1995). By 800-900 B.C., the Belize Valley Maya were raising sophisticated and complex structures, which would evolve into the spectacular Classic period architecture seen at many of these same sites (Cheetham 1995; Hohmann and Powis 1996, 1999).

Evidence on the evolution of Early-Middle Preclassic architecture at Blackman Eddy is even more robust. Garber et al. (2004a) have detailed an evolution of Structure B-1 through 13 different building stages, spanning the terminal Early Preclassic (Kanocha phase, 1100-900 BC) and early Middle Preclassic (early facet Jenney Creek phase, 900-700 BC). Modern destruction (unauthorized bulldozing of the site in the 1980s) partly damaged the site, but this cut also revealed the construction stratigraphy, and numerous architectural phases of Structure B-1. Garber and his team were able to conduct extensive vertical and horizontal excavations, and unravel a complex sequence of Preclassic building activities.

This research recovered distinctive outlines of very modest, early, circular or apsidal tamped floor platforms (Structure B-1, 8th-13th), based on numerous preserved post

holes, belonging to simple, Kanocha pole-and-thatch structures. There is even a trace of painted decoration on some of these wattle-and-daub structures. Several of these very early residential (domestic) structures have *chultunob* associated with them. In the succeeding Middle Preclassic period, a shift occurs from these apsidal structures to low, rectangular platforms at Blackman Eddy (Garber et al. 2004a). Builders began coating their floors with plaster, and erecting simple stone constructions (with block masonry). Garber et al. (2004a:37) suggest that this marks the start of public architecture in the Belize Valley (ca. 700-800 BC). With it we see ritual deposits (identified as dedication and termination caches), and a clear change in building form (to rectangular platforms with walls of 3-6 courses of limestone blocks). Some of the low platforms (0.5 m tall) of this time have suggestions of ritualized activities, possibly feasting (Brown 2003; Brown and Garber 2005).

This building pattern is succeeded at Blackman Eddy by more elaborate architecture (Structure B-1, 5th), a triadic architectural complex (Garber 2004a:Fig. 3.6 bottom), the central component standing nearly 1.5 m tall. Again, there are signs of what may have been ritual feasting events associated with dedication acts. By the late Middle Preclassic, quite noticeable architectural changes took place (Structure B-1, 4th), with a single tiered platform which probably had stucco masks on the front façade flanking inset stairs. These are the earliest façade masks currently known from the Maya lowlands (Brown and Garber 1998). This structure, in turn, was overlain by Structure B-1, 3rd, spanning the late Middle Preclassic and Late Preclassic, and doubling the size of the structure to over 3 m. Builders began to employ, for the first time, large cut limestone blocks.

In the Late (and Terminal) Preclassic period, Structure B-1 (2nd) is converted into a two-tier edifice, with painted plaster masks on both levels adjacent to outset stairs, all very reminiscent of Structure 5C at Cerros (Freidel 1977, 1985, 1986), Structure E-VII-sub at Uaxactun (Ricketson and Ricketson 1937), and elsewhere in the lowlands. Garber has argued that the ceremonial precinct at Blackman Eddy was designed (and likely other lowland centers at this time) to replicate the cosmic order and provide a "sanctified location" for rituals. This sanctification, of course, would have been reinforced by successive Maya leaders, who rebuilt, repeatedly in some instances, these increasingly sacred structures of their ancestors, likely using many of the same iconographic elements and rituals, from generation to generation (Freidel and Schele 1988; Schele and Freidel 1990:72-73). The stucco façade masks served to fuse cosmology and myth into a supernatural character of political power, this being the Late Preclassic Maya king (Brown and Garber 2005).

What we are witnessing, by the Late Preclassic (and probably earlier), is the use of Maya pyramidal structures as a "stage" for public ritual and performance. These increasingly grand buildings served as a "demonstration of the power" of these early elite, and promoted the notion of connectivity to Maya deities. By the Late Preclassic period, we can see artistic and architectural evidence for rituals associated with, and perhaps explaining, the emergence of the supernatural nature of their earthly leaders.

We have made considerable progress in understanding early Maya architecture which, not surprisingly, was entirely simple, and residential, in nature at first but, in some special instances, becomes more elaborate,

more complex, and *non*-residential through time. In the Belize Valley this significant shift in function occurs in the Early-to-Middle Formative transition, with considerable elaboration of the architecture in the Late Preclassic for ritualized performance activities which enhanced the political power of the emerging lowland Maya elite. The level of archaeological detail and documentation from the Belize Valley for this architectural evolution is noteworthy.

Technologies and Crafts

What kinds of crafts and technologies evolved during the Preclassic period in this region of the Maya lowlands? In 1990, when projects were beginning at sites like Cahal Pech, Pacbitun, and Blackman Eddy, there were some established ceramic typologies for the Preclassic period from different Maya regions. Similarly there had been a growing interest in defining Preclassic lithic, figurine, and artifact assemblages. Unfortunately, for most of these artifact categories the sample size was far smaller than any researcher would have preferred, and excavation contexts were not always favorable. Research more recently has produced a significant body of new artifactual data. Tens of thousands of pottery specimens have been unearthed. Classification of these has triggered debate (to which I have already alluded), but also a lot of interest and much more detail than Gifford could have hoped for in the 1960s. What is obvious is that Maya ceramics of ca. 1100 B.C. were already very well made and highly varied. Cunil/Kanocha ware of the terminal Early Preclassic period, while some of the earliest Maya pottery known, shows considerable sophistication and, most likely, is a product of centuries of earlier practice.

Collectively, the sites of Cahal Pech, Pacbitun, and Blackman Eddy have generated the largest single collection of Preclassic, hand-modeled figurines in the Maya subarea. There are hundreds of specimens showing great variety and early artistic ability (Healy and Cheetham 1996). Distributional studies also suggest unusual concentrations in, and associations with, particular Preclassic structures investigated (e.g., Structure B-4 at Cahal Pech). This may provide a unique window to understanding the use and importance of small, hand-modelled figurines of Formative society.

In regard to lithics, it is obvious from the investigations that the Preclassic Maya of the Belize Valley had access to, and were skilled workers of, many different geological materials, including obsidian, chert, slates, granites, and jade. There are now excellent, abundant, examples of both chipped and ground stone implements created by the Preclassic Maya of this region (Iannone and Lee 1996). One example of note is the extraordinary collection of small chert drills (numbering in the hundreds) which, we now realize, were employed for the working of shell, and the production of tiny shell disk beads. All three sites under consideration here have produced large quantities of these distinctive chert drills.

We also know now that slate was being quarried, and worked, in the Preclassic and that it became more important as a workable raw material at sites, such as Pacbitun, in the Classic (Healy et al. 1995). Our understanding of Preclassic Maya working of greenstone (jadeite) is, however, quite limited and in need of more attention.

A considerable quantity of obsidian from Preclassic contexts in the Belize Valley indicates that blade production was highly developed and a significant technology (Hohmann and Glascock 1996). Interestingly, the detailed excavations have allowed a

refinement of the evolution of this particular lithic technology, demonstrating a gradual transition from flakes to blades in the Valley (Awe and Healy 1994).

The quantity of marine shell (in the form of both finished artifacts and scrap) at both Cahal Pech and Pacbitun suggests that there existed a substantial Middle Preclassic (900-400 B.C.) A cottage industry in shell bead production (Hohmann 2002). These small, flat, disk beads were the primary form of personal adornment among the Maya in the Preclassic period, and the manufacturing of this distinctive shell jewelry is now much better defined. Evidence from all three Preclassic sites examined here indicates the presence of at least part-time specialization in this craft (Cochran 2005; Hohmann et al. n.d.; Lee and Awe 1995).

Trade and External Relations

What type of trade, economy, and external relations existed in the Belize Valley during the Preclassic period? While we know quite a bit about Maya trade in the Classic period, we know much less about such activities in the preceding Preclassic period. In the past, much of the difficulties revolved around inadequate samples. Recent work has greatly expanded the database, and revealed that there was a significant amount of very early trade in the Belize Valley. For example, technical analyses of obsidian samples from Preclassic deposits at both Cahal Pech and Pacbitun have demonstrated that there were multiple (at least 3) obsidian sources located in the Guatemalan highlands that were used by the Preclassic Maya. Earlier characterizations had concluded that Guatemalan obsidian had been extracted by the Preclassic Maya primarily from the San Martin Jilotepeque source. The investigations in the Belize Valley have shown conclusively that the extraction and exchange of obsidian comes from the El Chayal and Ixtepeque sources. These key obsidian quarries, also in Guatemala, used in the Classic and Postclassic periods, were also important in the Preclassic (Awe et al. 1996; Hohmann and Glascock 1996). Similar findings have been reported recently for Preclassic Colha (Brown et al. 2004).

Greenstone was also being traded by the end of the Early Preclassic, though available in much smaller quantities in the Preclassic than in the Classic period, based on current information from Cahal Pech, Pacbitun, and Blackman Eddy. The most likely source for the jadeite is the Motagua River valley of southeast Guatemala. Jadeite was clearly a highly valued commodity, even at this early date in Maya cultural evolution, and was being imported to the Belize Valley from considerable distances (the Motagua Valley, for example, is over 250 km away).

Marine shells have already been mentioned regarding craft production. There is no question but that the Preclassic Maya were collecting large quantities of marine shell (especially Strombus), for export to all three of the sites under discussion here. These were being transported (with or without the marine animal) over hundreds of kilometers to inland Maya centers (Hohmann 2002). Equally surprising is the fact that the early Maya were also catching marine fish (including reef species inhabiting ecozones far off the coast) and importing these (presumably preserved by either salting or smoking processes) into the distant lowland interior by the Middle Preclassic period (McKillop 2002, 2004, 2005b; Powis et al. 1999).

Unfortunately, so far, we remain embarrassingly uninformed about the actual “mechanisms for trade”. We know that the

exchanges were occurring, and that long-distance and short-distance exotics were being acquired by the Preclassic Maya, but we are unclear about the precise process used. How much was controlled by the elite? How were these goods transported? Was the internal movement of exotic goods a result of a redistributive economy, controlled by Maya chiefs, by migrant, itinerant craft specialists, or by some form of incipient market economy? Perhaps we will never have this type of detailed reconstruction, but the questions highlight the areas which need more research.

Subsistence and Health Status

What can be determined about Preclassic Maya subsistence, nutrition, and health? This is a topic which is particularly important to Maya archaeological reconstructions, but which is also poorly understood. In part, this is because relatively few Preclassic Maya burials and preserved human remains have been uncovered, especially from Early and Middle Preclassic interments. In cases of fortuitous preservation, human skeletal remains can shed light on ancient diet, health status, and average age at death, stature, and even problems related to specific diseases. At present, with the exception of the site of Cuello, the Preclassic Maya skeletal sample is very limited. Of the 65+ burials unearthed at Cahal Pech, only 13 were dated to the Preclassic period (Song 1995). Of the 20+ burials unearthed at Pacbitun, only 2 were Preclassic (Arendt et al. 1996; Song 1995). The human remains from Blackman Eddy are fragmentary and poorly preserved (Duffy 2005). All of the burials were of a simple type (cists or crypts); there were no Preclassic tombs. In nearly all cases, the individuals were oriented with the head to the south, a Belize Valley-wide burial custom which continued (with minor exceptions) throughout the Classic period. As such, Belize Valley projects have generated new skeletal and mortuary evidence for the Preclassic period, but the sample remains woefully inadequate.

Overall, indications are that the Preclassic population was in generally good health. There were few obvious indicators of pathology. In fact, there are signs that the Belize Valley Preclassic Maya were actually in *better* overall health than their Classic period descendants. This phenomenon has been hinted at elsewhere (e.g., Cuello). While the presence of traditional maize processing implements in Preclassic deposits implies an agriculturally-based economy, there remain significant questions about the degree of importance of maize (*versus* other plant and animal foodstuffs) in the diet at this early date.

Analysis of stable carbon and nitrogen isotope ratios of Preclassic human skeletal remains has provided some new insights to this question of the composition of the early Maya diet. Investigators have determined, based on evidence from Cahal Pech, that maize was an important component of the Maya subsistence even at this early stage (White et al. 1996). The Preclassic period maize consumption levels are comparable to those from other Preclassic Maya sites in the eastern lowlands (Lamanai and Cuello, Belize, for example) for which we have comparative isotopic data, though lower than some Preclassic sites in the central lowlands (Altar de Sacrificios and Seibal, Guatemala). Overall, the percent of maize in the diet of the Preclassic Maya was less than the amounts being consumed by the Maya during the Classic period, but approaching this level.

There are, for example, some isotopic data that indicate an increase in reliance on

maize after 400 B.C. (Late Preclassic period), and a shift to a more limited subsistence base (strongly reliant on maize) by the Classic period (Powis et al. 1999). The combined carbon and nitrogen isotopic ratios indicate that meat consumption by the Preclassic Maya was a mixture of terrestrial herbivores (like deer) and fish (both freshwater and marine species). The isotopic data do not indicate if either freshwater shellfish (such as *jute*), or freshwater species of fish, were consumed in large quantities, though the artifactual data independently indicate a considerable use of invertebrates (>100,000 altered *jute* shells have been identified in Middle Preclassic midden deposits at Pacbitun alone) (Healy et al. 1990). Compared to other Preclassic samples, protein resources consumed by some groups at Cahal Pech (for which we have good isotopic evidence) were quite similar to those at Cuello and Altar de Sacrificios, but more freshwater fish were being consumed at Lamanai and Seibal.

In addition to the isotopic analyses, quantities of Early and Middle Preclassic soil deposits from excavations were processed by flotation techniques, to recover paleobotanical remains. Importantly, these studies have shown that the Preclassic Maya were exploiting a wide array of both domesticated and wild plants (Lawlor et al 1995; Weisen and Lentz 1999). The studies provide confirmation of early Maya use of maize (by ca. 1000 B.C.), and squash, ramón, nanché, calabash, and cotton. Later, in the Classic period, we encounter clay and stone spindle whorls (evidence for spinning and textile working by the Maya). Excavations at Cahal Pech have generated some of the earliest cotton specimens from the Maya lowlands (terminal Early Preclassic) and, similarly, some of the earliest maize and squash evidence. Farming activities in the Belize Valley were in full swing by 1100 BC, and probably earlier when one considers pollen data from elsewhere in the Maya subarea.[3]

Faunal analyses have produced excellent new data. It is now very clear that the Preclassic Maya in the Belize Valley were actively hunting white-tailed deer, brocket deer, nine-banded armadillo, agouti/paca, and tapir. They were also catching several types of turtles, and a variety of birds. Domestic dogs were present and may have been used for hunting and scavenging, or as another food source for the Maya (Powis et al. 1999; Stanchly 1995, 1999). In sum, by comparison of the isotopic, paleobotanical, and faunal data, we now have a much more detailed picture of Preclassic Maya subsistence. While agricultural, with a growing reliance on maize, squash (and presumably beans) through the Preclassic period, it is likely that the Maya of the first part of the Preclassic period were less reliant on growing crops than we realized. They were skilled hunters, fishers, and gatherers (whether for invertebrates or wild fruit). In essence, all the data point to a broad-based subsistence pattern early in the Preclassic, with a steadily growing dependence on agriculture by the end of the Preclassic and, presumably, at a time when forest clearing by the growing Maya population would have begun to impact the wild flora and fauna in a negative manner.

Social Complexity

What evidence is there for increasing social and political complexity during the Preclassic period? We now can point to the first signs of public (*versus* domestic) architecture appearing by ca. 700 B.C. in the Belize Valley (Brown and Garber 2005). This surely marks the beginning of a shift from a more egalitarian society to a stratified one, and suggests a more centralized leadership

(able to marshal a number of people in Preclassic Maya society to assist with construction of public structures of importance to the group as a whole) (Cheetham 1995, 1996; Freidel and Schele 1988).

Testing of Plaza B at Cahal Pech revealed that the architecture here, in the earliest stages of site development, evolved from being of a purely domestic nature to fully a public architecture. In essence, this particular plaza area seems to shift from being a common ground to being an elite territory. There are even hints of special, elite residences emerging in the Middle Preclassic (Cheetham 1996:26). Garber et al. (2005) are continuing explorations of this important plaza zone.

Although limited in numbers, Preclassic burials indicate that some individuals in the Belize Valley, by at least the Late Preclassic, had begun to accumulate greater wealth and, presumably more prestige than others. New evidence from the Chan site, near Xunantunich, suggests notable wealth accumulation by the late Middle Preclassic (Robin, this volume). Nearly all early burials occur in architectural contexts (within structures or platforms) (Song 1995).

There are some suggestions, seen in the form of hand-modelled figurines, of growing social complexity in the Preclassic. Later Preclassic figurines show more elaboration in hairstyles, headgear, personal adornment, etc. (Healy and Cheetham 1996). Some design elements, present on both Cunil ceramics and early carved jade ornaments; resemble Olmec-like symbols, hinting at a flow of Mesoamerican iconography between the terminal Early Preclassic Maya of the Belize Valley and Gulf Coast Olmec and others (Awe 1992, 1994; Awe and Cheetham 1993; Cheetham 1995). There are indications too of growing Maya religious symbolism in the Preclassic (Awe 1994, 1996). By the Early-Middle Preclassic, the Maya of the Macal region, Cahal Pech, and Blackman Eddy, were exploiting limestone caves, and in some instances extracting exotic materials (e.g., drip water “cave pearls”) (Garber et al. 2005:22; Moyes, this volume). By the Late Preclassic, at the latest, the Maya of Pacbitun were using nearby caves, and may have even begun to bury some of their dead here (Healy et al. 1996). Awe (Awe et al. 2005; Awe and Helmke 2005), Brady (1994; Brady and Stone 1986), and others, have documented the religious significance of caves to the Maya. It is now apparent that this ritual use extends into the earliest phases of the Preclassic. Finally, by the close of the Preclassic period, there is ample evidence for increasing monumentality in Maya architecture in the Belize Valley. Deep stratigraphic excavations of Structure B-4 at Cahal Pech, and Structure B-1 at Blackman Eddy, have detailed the evolution of architectural complexity for early Maya temple-pyramids. In the Late Preclassic we can recognize more ornate (plaster covered, painted) and larger-scale (multi-tiered) architecture at Cahal Pech, Pacbitun, and Blackman Eddy.

Of course, this pattern is mirrored at other Late Preclassic sites in Belize (e.g. Blue Creek, Cerros, K’axob, Lamanai) and elsewhere. All these changes are signs that Preclassic Maya society was changing and moving to a different plane of cohesion, uniformity, and socio-political complexity, which is well known from Classic period evidence.

Conclusion

A heightened interest by scholars in the Preclassic Maya has emerged (Danien and Sharer 1992; Hammond 1986, 1992). The

recent excavations and analyses of Preclassic materials from Cahal Pech, Pacbitun, and Blackman Eddy in the Belize River Valley have resulted in new perspectives on the genesis of ancient Maya civilization, and what is clearly one of the most crucial stages of Mesoamerican cultural development (Powis 2005). It is likely that the ancient Maya had settled the Belize Valley by the terminal part of the Early Preclassic (ca. 1100/1200 B.C.), and even by this early date there are signs that Maya society was beginning to move away from an egalitarian social structure.

There are, of course, many other questions which might also be asked here, but space constraints prevent me from deliberating further. To return to my initial remarks, we can see there is good reason why sections of books on Maya archaeology are so frustratingly brief where they deal with the Preclassic period and rise of Maya civilization. While archaeologists have made considerable progress, we still lack adequate data on many fronts. We are still in the early stages of data gathering for the Preclassic Maya. In this regard, it is important that researchers not lose sight of what ought to be a major research goal- to understand how and why politically and economically complex societies arise. How did ancient Maya "civilization" begin?

I am pleased to have played a small role in advancing knowledge of the Preclassic Maya of the Belize Valley (one important region of the lowlands), but we've a lot more to learn before we have sufficient information to construct meaningful models about this crucial process. Until this happens, many of our favorite ideas, and pet theories, will remain largely in the realm of speculations.

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Notes.

1. In fact, coverage is actually less than this because much of the discussion about the Preclassic Maya actually revolves around possible Olmec or Izapan influences.
2. While there are some traces of Cunil pottery at Pacbitun, the specimens are not derived from stratified deposits and, stylistically, appear later in the sequence established at Cahal Pech (Hohmann and Powis 1999).
3. This should not surprise anyone as Rue and colleagues (2002:267) have recovered pollen and charcoal evidence from the Copan Valley that shows *Zea mays* there as early as 2300 BC. Pollen diagrams from Copan revealed intensification of growth of *Zea* about 900 BC and 400 BC (and again in AD 600). Pohl (et al. 1996) have evidence from northern Belize of a marked increase in forest destruction (presumably from agricultural activity) dating to about 2500 BC, and Leyden (2002:94) studying pollen from the Peten (Guatemala),

not far from the Belize Valley, found the region remained heavily forested until about 2000 BC, when tree pollen suddenly fell, charcoal (again) rose abruptly, and *Zea* appeared in the Middle Preclassic levels (ca. 850-700 BC).

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2 EXCAVATIONS IN PLAZA B AT CAHAL PECH: THE 2004 FIELD SEASON

James F. Garber, Jennifer L. Cochran, and Jaime J. Awe

Excavations at the site of Cahal Pech, Belize have revealed a complex sequence of building episodes and ritual deposits initiated at the end of the Early Formative (1000 BC) continuing for several centuries. These investigations revealed some of the earliest public architecture found to date within the Maya Lowlands and thus provide detailed information on the architectural configurations and the ritual behavior associated with the buildings. The presence of exotics in these early deposits indicates the participation in a long distance trade network and the emergence of social stratification. This chapter examines these patterns, compares them with other examples, and provides a foundation for the understanding of the emergence of social complexity in the Maya Lowlands.

Introduction

The 2004 field season marks a transition year in the history of the Texas State University Belize Valley Archaeological Project (BVAP). Since the project's beginning in 1990, our research had focused on the central area of the Belize River Valley, primarily at the site of Blackman Eddy and secondarily at the sites of Floral Park and Ontario Village. In the last seven years of the project we focused heavily on the investigation of a complex series of Formative construction episodes underlying Structure B1 at Blackman Eddy. Much of this work built upon earlier research at Cahal Pech conducted by Awe (1992) and later by Healy and Awe (1995, 1996). All of these efforts produced substantial data on a previously unrecognized occupation phase for the Maya Lowlands initiated at the end of the Terminal Formative, Cunil at Cahal Pech and Kanocha at Blackman Eddy, both dating 1100-900 BC (Awe 1992; Garber et al. 2004 and Healy et al. 2004). These two phases, Cunil and Kanocha, show strong similarities yet at the same time exhibit some critical differences. Some of these differences are due to the specific archaeological contexts excavated, others are due to the character of the excavations, and still others are due to the nature of the deposits themselves.

While the Blackman Eddy and Cahal Pech data sets have contributed significantly to new understandings of the very beginnings of the Maya, many questions remain unanswered. Awe and Garber have discussed these at length and it is from these discussions that this current collaborative research endeavor was born.

Background

The site of Cahal Pech is located on a hill overlooking the modern town of San Ignacio in the Cayo District and has been the subject of several investigations spanning over fifty years (Figure 1). The site was strategically placed on the western bank of the Macal River and covered an approximate area of 10 km during the Classic period (Awe 1992; Healy et al. 2004). The site core consists of 34 large structures including, massive temple mounds, range structures, two ballcourts, and formal courtyards and plazas containing several stelae and altars (Figure 2). A number of settlement clusters surrounding the site also contained monumental architecture.

Excavations in the site core on and near Structure B4 have revealed extensive

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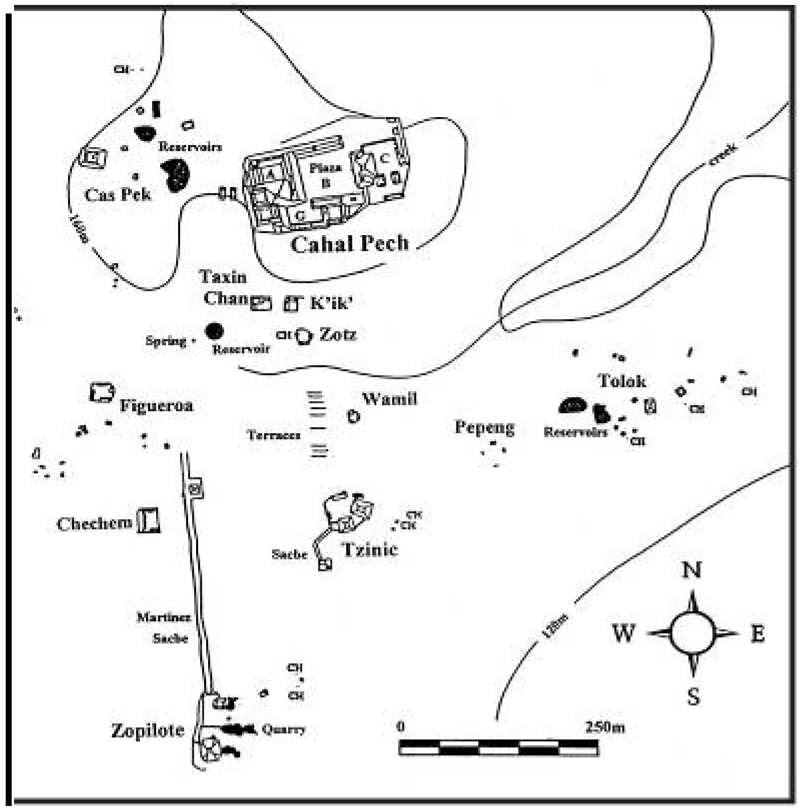

Figure 1. Cahal Pech and settlement zone (from Healy et al. 2004)).

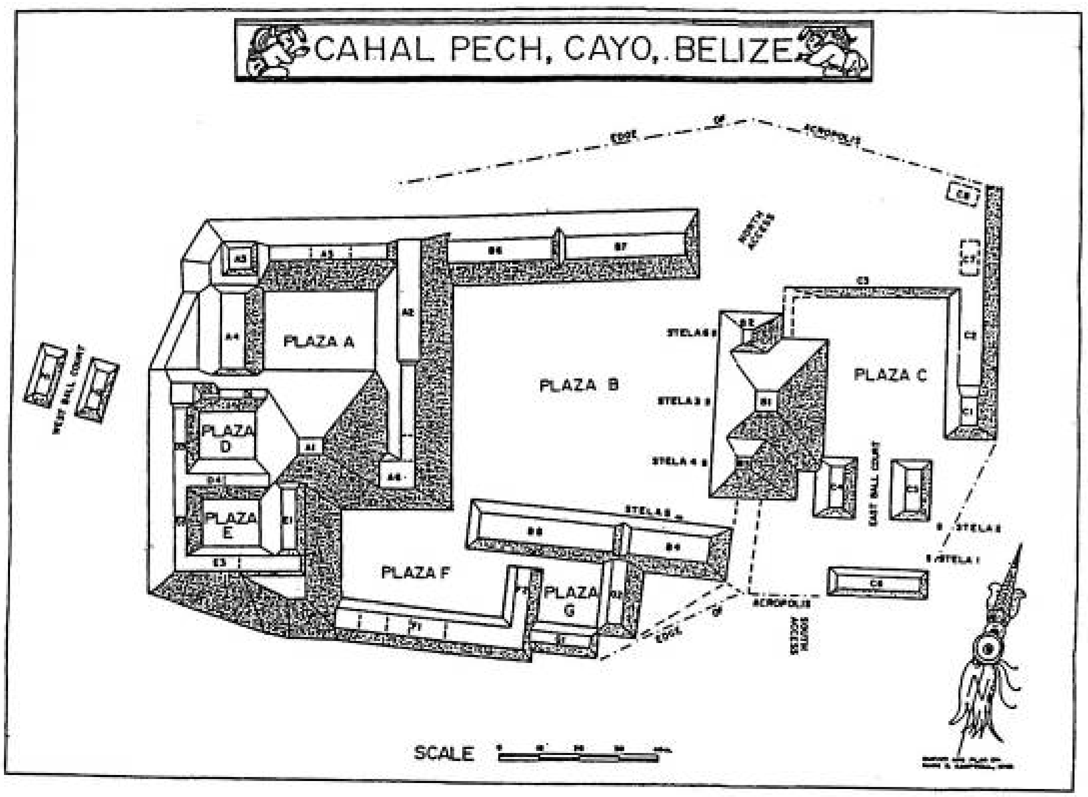

Figure 2. Cahal Pech site core (from Awe 1992).

Formative deposits (Awe 1992; Cheetham 1995, 1996). Archaeological investigations revealed four zones of Early and Middle Formative architectural features with multiple construction phases. Awe (1992) initially described the Formative remains at the site of Cahal Pech and set up a preliminary typology of the early ceramic material. Awe was the first to define the Cunil phase and describe the associated ceramic material. Further investigations and analysis of this early material was conducted following the initial study (Cheetham 1995, 1996; Garber 2005; Healy et al. 2004). In 2002, the BVAR project, under the direction of Jaime Awe, initiated further testing near Structure B4 in order to further investigate the early architectural features and to increase the sample size of the Cunil ceramic material.

Investigations at Cahal Pech in the 2004 field season (Garber 2005) revealed a series of Middle Formative structures with associated features and ritual deposits which directly overlaid the initial Terminal Early Formative occupation located on bedrock. The trench excavations of these early deposits revealed three low platforms and associated ritual deposits and caches. Evidence of exotic items and a marine shell workshop was also encountered and has implications for emerging social stratification at this early date. The earliest architecture and cultural material is designated the Cunil Phase (1100-900 BC). Although the 2004 excavations produced a considerable sample of early ceramic material which will facilitate the needed detailed ceramic assessment, the 2004 sample from the north end of Plaza B shows some important differences compared to what had been recovered from the south end of the plaza below and in front of Structure B4. In particular, the 2004 excavations showed a much lower percentage of the elite incised wares. This is clearly a function of differential context and thus this goal of the 2004 season was accomplished. However, the size and complexity of the platforms was greater than anticipated and thus further clarification on their function and extent is necessary.

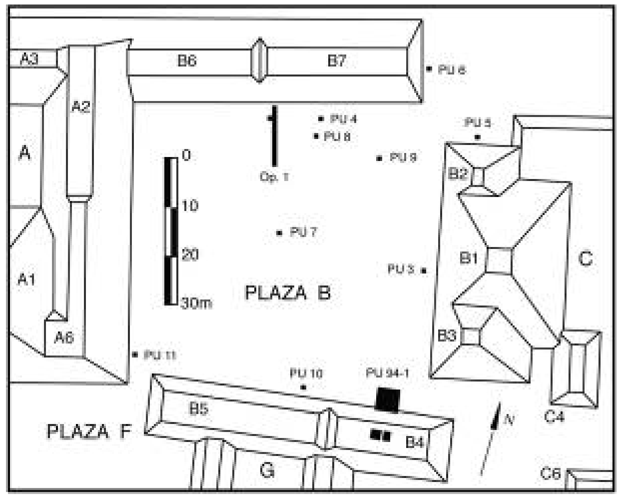

Figure 3. Plaza B at Cahal Pech (from Healy et al. 2004)

Objectives

Test units have been excavated in several of the Cahal Pech plazas. It was clear from these tests that Plaza B was the original summit of the hill and that early cultural materials in the other plazas were present, but deeply buried by plaza construction in an effort to enlarge the usable summit of the hill. Thus, Plaza B was the logical place to efficiently expose additional Cunil Phase remains. As noted above, the 1x1 m test units in Plaza B had demonstrated extensive use of the hilltop during Cunil times – important information - but inadequate to fully assess architectural features, activity areas, ritual activity, and community organization. The Plaza B test-pitting program yielded tantalizing information on habitation and utilization of this area (Cheetham 1996). In an effort to help clarify this utilization and get a more comprehensive view of the architectural

variability, a north-south trench across Plaza B, was deemed to be the appropriate strategy (Figure 3). While this would provide more information than single 1x1 m test units, it would not yield the quality of information that comes from a large block excavation, but hopefully it could help us identify potential areas for such an investigation.

Excavations – Levels and Architecture

Level 1 (humus)

Level 1 consists of the humus layer overlying the eroded surface of Plaza Floor 1 (Figure 4). This level was approximately 20 cm thick throughout the excavation area As expected, sherd counts and artifact density was low. Artifacts within this layer are probably the result of bioturbation from below or have been washed in from adjacent monumental architecture. Most sherds were highly eroded and are of the Spanish Lookout Phase.

Level 2 (Floor 1 – Late Classic)

Level 2 consists of the fill of Plaza Floor 1, which dates to the Late Classic. The surface of this plaza floor was heavily eroded, but a few patches of finished plaster were encountered. The sub-flooring consisted of angular limestone ballast within a dry yellow marl matrix. This level was approximately 10 cm thick.

Level 3 (Floor 2 – Late Preclassic/ Protoclassic)

This level consisted of the fill of Plaza Floor 2. This floor was also highly eroded and was recognized by the layer of sub-floor limestone ballast. The floor was approximately 15-20 cm thick. The ceramics of this level included many Sierra Reds as well as two mammiform vessel feet and date to the Mount Hope and Floral Park Phases.

Level 4 (Floor 3 – Late Preclassic)

This level consists of the fill of Plaza Floor 3. This floor was patchy throughout the excavation area, but did exhibit some areas with finished plaster. The floor was approximately 15-20 cm thick.

Level 5 (Floor 4 and ritual fill – Middle Formative)

This complex level consisted of an artifact-laden zone that varied in thickness from 20 cm in Op.1a to 5 cm thick in Op. 1e (Figure 4). This layer extended throughout the Op. 1. Upon this surface was a low 5-10 cm cobble platform in Op. 1a. In addition to a high density of sherds, numerous artifacts were recovered from this zone. A detailed analysis of this level is in progress. Our preliminary conclusion is that this zone may represent a feasting event that included the breaking and scattering of serving vessels and ritual debris.

Level 6 (Platform A and B construction fill – Middle Formative; Platform C – Terminal Early Formative)

Platforms A, B, and C are immediately below the artifact laden zone discussed above (Figure 5). Platforms A and B are composed of cobbles, flat limestone slabs, and tamped marl. No plaster was evident on either. The sherds within the fill of Platforms A and B indicate an early facet Kanluk construction date. Platform A has a single course stone step along its southern edge. The full dimension of this platform is unknown at this time, although it was at least 2.8 m in length. Platform C (Cunil Phase) is present in the eastern portion of Op. 1b, c, and e. Its surface is a hard whitish yellow tamped marl and is approximately 15 cm lower than the surface of Platform B. The surface of Platform C was cut to accommodate the later construction of Platform B. Both Platforms B and C were aligned 22 degrees west of magnetic north. The exact dimensions are unknown for both of these platforms. Platform B and C extended at least 10.03 m in length, but the dimensions extended beyond the limits of the excavation unit.

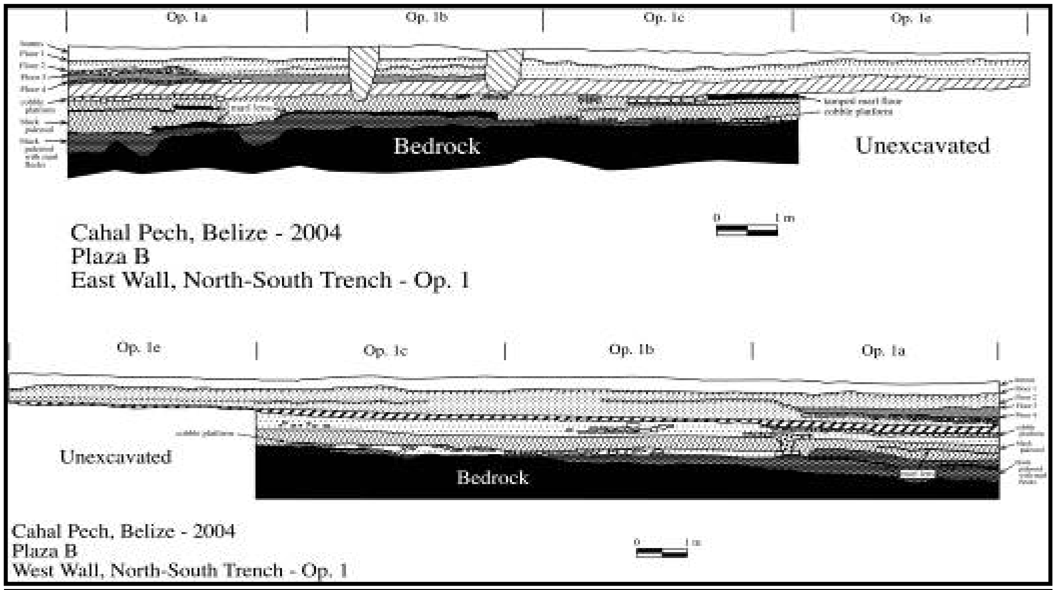

Figure 4. East profile – Op. 1; West profile – Op. 1

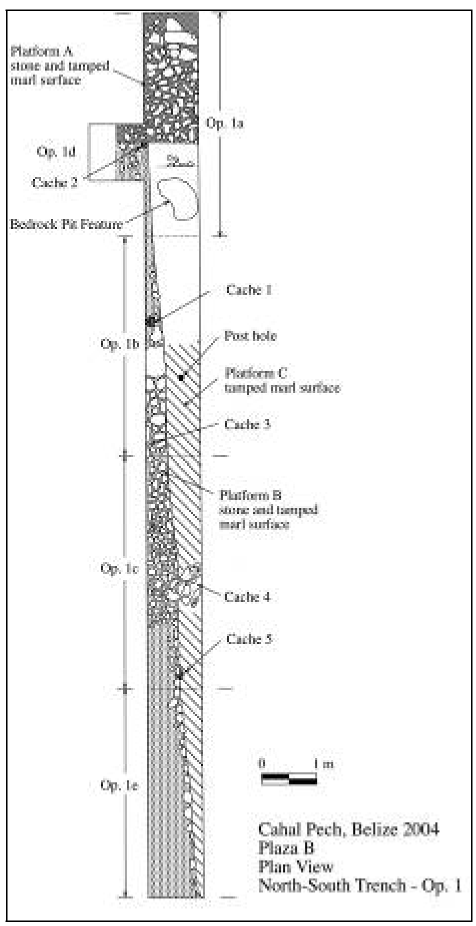

Figure 5. Plan view - Operation 1

<u>*Levels 7 and 8*</u> *(black paleosol – Terminal Early Formative)*

The fill of this level is composed of dense black greasy clay forming the paleosol layer above bedrock. Within this layer were several white marl layers (Figure 4). The ceramics from this layer are of the Cunil Phase.

<u>*Level 9*</u> *(Black paleosol with white marl chunks – Terminal Early Formative)*

The matrix of this level is the same as that for Levels 7 and 8 with the addition of white marl chunks dispersed throughout. This level terminated at approximately 2m b.s.d. in the north end of the unit and sloped upwards to the south to terminate at approximately 136 cm b.s.d. The ceramics from this level are of the Cunil Phase. A level 7, 8, and 9 form the base for Platforms A, B, and C.

Caches

Cache 1 This cache consists of a partial ceramic dish (Backlanding Incised) that was recovered along the eastern edge of Platform B, just below the level of its tamped marl surface (see Table 1 for a chronological assessment of architectural features and caches). Partial vessel "caches" (off the center-line of platforms) are typical for the Middle Formative of the Belize Valley (Brown 2003). They do not constitute dedicatory caches as we see in later periods but rather can be seen as ceramic feasting residue frequently associated with construction episodes (Brown and Garber 2005).

Cache 2 This complex cache is composed of thirteen worked greenstone pieces, a headless figurine, and three slate bars. It was located at the junction of Platforms A and B within the construction fill of Platform B. The cache dates to the Cunil – early facet Kanluk interface (900-800 BC).

This cache is interpreted here as a "creation – cosmogram". The ancient Maya (and modern Maya as well) perceive the universe as layered. There are thirteen layers to the upper world and 9 layers of the underworld. On the horizontal dimension, the world is perceived as quadripartite; partitioned into 4 quarters with the axis mundi at the center, traversing all three realms (underworld, earth, and heavens). In the Maya cosmogenic view, "Bacabs" or ritual assistants are positioned at the corners of the world to hold up the sky realm. "Bacabs" are frequently depicted with arms upward. This important aspect is often reflected as an element in the hieroglyphic titles of elite. (see Matthews and Garber 2004 for a discussion of cosmogenic view in the built environment).

In the various creation stories of the Maya (Popul Vuh most notable) the resurrected father of the Hero Twins is taken to the place of creation, the "Three Stone Place". It is here at the base of the "first true mountain of maize" that creation of the universe and people occurs. The "Three Stone Place" is represented in Maya glyphic texts as well. The three slate bars of this cache represent the "Three Stone Place" of creation. The thirteen greenstones represent the thirteen layers of the upper world.

Interpretation of the headless figurine is somewhat problematic but probably represents an ancestor in his role as a "Bacab".

Cache 3 This cache consists of a partial ceramic dish (Savanna Orange) that was found in the fill of Platform B slightly above bedrock. As noted above, partial vessels "caches" are typical for the Middle Formative of the Belize Valley (Brown 2003). They do not constitute dedicatory caches as we see in later periods but rather can be seen as ceramic feasting residue

Feature	Period	Ceramic Phase	Date
Plaza Floor 1	LC	Spanish Lookout/Tiger Run	600-900 AD
Plaza Floor 2	LPC-PC	Mount Hope/Floral Park	100 BC-300 AD
Plaza Floor 3	LPC	Barton Creek	350 BC-300 AD
Plaza Floor 4	MF	early/late Kanluk	700 BC
Platform A	MF	early facet Kanluk	900-700 BC
Platform B	MF	early facet Kanluk	900-700 BC
Cache 1	MF	early facet Kanluk	900-700 BC
Cache 2	MF	early facet Kanluk	900-700 BC
Cache 3	MF	early facet Kanluk	900-700 BC
Cache 4	MF	early facet Kanluk	900-700 BC
Platform C	TEF	Cunil	1100-900 BC
Cache 5	TEF	Cunil	1100-900 BC
Bedrock Pit	TEF	Cunil	1100-900 BC

LC = Late Classic, LPC = Late Preclassic, PC = Protoclassic,
MF = Middle Formative, TEF = Terminal Early Formative

Table 1. Chronology of Architectural Features and Caches

frequently associated with construction episodes (Brown and Garber 2005).

Cache 4 This cache consists of a partial ceramic dish (Savanna Orange) that was recovered along the western edge of Platform C, on top of the tamped marl surface.

Cache 5 This cache consists of a cluster of 20 hard limestone spheres. They were found in a shallow bedrock depression beneath Platforms B and C. All 20 spheres are composed of hard dense limestone. Some of the spheres are pinkish in color. None show any signs of burning. Although all have been shaped by battering, they do not appear to be hammer stones. The meaning of this cache is unclear. Possibilities include; calendar counting stones, as there are 20 day names of the 260 day calendar; or perhaps gaming stones.

Artifacts

Figurines Ten figurines were recovered in the 2004 excavations; 2 heads, 4 legs, 3 torsos, and 1 torso with legs. Although one was recovered from Level 1, the humus layer, its paste and composition are consistent with those of the Middle Formative and probably made its way upward into the humus layer by bioturbation (rodent activity or tree fall). The remaining nine are from Level 5 which dates to the Cunil – early facet Kanluk interface. Some are of the characteristic orange paste of early Kanluk and others are of the lighter yellow or tan paste characteristic of Cunil.

In addition to the figurines, an anthropomorphic-zoomorphic vessel foot was recovered from Level 5. When frontally viewed it depicts a human face with a beard or pointed chin (note the extra side buttons on the sides of the chin/beard). When viewed from the side it depicts a long-snouted animal, possibly a coatamundi. The extra side buttons are the eyes of this animal and the ears of the anthromorph also function as the ears of the animal. This dual representation in a single figure may represent a "transformation" figure, with the animal being the spirit companion or "way" of the anthromorph.

Ceramic Spool/Beads. Two molded ceramic spool/beads were recovered. Both are incised with similar designs. The design

is a quadripartite quincunx. Each corner motif is composed of a cluster of three spheres. Quadripartitioning and the quincunx are both metaphors for creation. Interestingly, the corner motif is a “Three Stone Place”, a parallel to the “Three Stone Place” (3 slate bars) of Cache 2 located at the corner of Platform C. This corner position for “Three Stone place” appears to be a Middle Formative characteristic. In the Classic Period it is positioned at the center of ritual scenes.

Chert Drills A total of 30 chert drills were recovered from the excavations, most from Middle Formative contexts. These occur in great numbers in the same levels as marine shell fragments and beads and are taken as evidence of marine shell bead manufacturing activities (Cochran 2005; Hohmann 2002).

Marine Shell Fragments and Beads A total of 78 marine shell fragments and 19 marine shell beads or bead fragments were recovered in the excavations. All except one fragment are from Middle Formative contexts. The presence of marine detritus, chert drills, and shell beads indicate bead manufacturing activity as noted above. Furthermore, the presence of marine shell in such quantity indicates participation in long distance trade networks.

Greenstone/Jadeite Seventeen pieces of greenstone/jadeite were recovered, all from Middle Formative contexts. Thirteen are from Cache 2 discussed earlier. Additionally, there were 2 polished fragments, one unworked chunk, and a whole polished disk. The disk is high quality greenstone/jadeite and is highly polished on one side and smoothed on the other. It was probably part of a mosaic composition.

Ocarinas Three molded ceramic ocarina whistles were recovered; two bird forms and one gourd-shaped ovoid. All three are from Middle Formative contexts and they are of a paste and composition characteristic of the Cunil Phase. Only the ovoid specimen is whole and when blown emits a shrill sound.

Cave Pearls and Stone Spheres. Three small hard round spheres were recovered in Cunil contexts. The smallest is pinkish in color. None show any evidence of having been ground, pecked or polished. They appear to be natural formations but clearly were transported to this location by the Maya. Geologist Paul Goldberg has identified nearly identical specimens as cave pearls. Cave pearls are a rare drip water cave formation that results from chemical laden water dripping into shallow cave pools. All three specimens were recovered in the Cunil layers immediately overlying bedrock. Interestingly, virtually identical specimens were recovered from the contemporaneous Kanocha deposits at Blackman Eddy. The function or meaning of these is unknown at this time, but given the importance of caves in Maya ideology, they no doubt had significant symbolic meaning.

Conclusion

The 2004 field season was successful in accomplishing several research objectives. In particular:

- Quickly and efficiently finding substantial Terminal Early Formative and Middle Formative deposits.
- Documenting in part the areal extent of Middle Formative platform building surfaces. While the total areal extent of these is unknown at this time, the 2004 excavations demonstrated that they are of considerable horizontal size.
- Identifying a variety of Formative contexts that includes 5 caches, a unique bedrock feature, and a possible deposit of ritual feasting debris.
- Cache 2 with its thirteen greenstones, headless figurine, and 3 slate bars is the earliest of its kind in the Maya Lowlands and provides important

information relative to the Formative Maya cosmogenic view. The iconography of the ceramic spool/beads is important in this regard as well.

- The recovered artifacts added to the database of Formative figurines. This will ultimately aid in an assessment of origins for these early settled groups.
- The Cunil ceramics recovered show a lower percentage of the elite based incised ceramics previously found in the excavations within and in front of Structure B4 on the southern end of Plaza B. This will facilitate an expanded assessment of function and social differentiation

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3 BEFORE THE BOOM: CARACOL'S PRECLASSIC ERA

Arlen F. Chase and Diane Z. Chase

A number of Preclassic constructions and deposits have been recovered during the course of 21 field seasons at Caracol. These materials indicate that isolated house groups existed in Caracol's extensive settlement area from as early as 600 B.C. The earliest materials recovered from the site epicenter thus far date no earlier than 300 B.C. Preclassic caches recovered in Caracol's A Group, associated with an early version of an "E Group" astronomical complex, indicates that the Preclassic site was "centered" in the A Group. Towards the end of the Preclassic, this focus may have shifted to the B Group at Caana, whose height by A.D. 150 was over 34 meters. Contextual review of the Caracol's A Group remains suggest that its major construction was associated with the initiation of Baktun 8 in the Maya calendar.

Introduction

The Preclassic Period is one of the most difficult to define and understand in the Maya lowlands. This is due to several factors. Preclassic materials are usually deeply buried under later occupation. Thus, often substantial earth must be removed to approach these remains, and many Preclassic remains have been disturbed and used for fill in later constructions. Of greater concern is the fact that Preclassic materials frequently do not follow patterns that can be identified for the succeeding Classic Period – specifically the practice of placing ritual items on a central structural axis. Using recognizable Classic Period patterns to guide excavations generally only serendipitously results in the recovery of Preclassic remains – and, in fact, may contribute to and under representation of Preclassic materials in archaeologically recovered samples. Preclassic remains, burials included, are often spread over a large spatial area, meaning that areal excavation is usually necessary to recover a meaningful sample. And, recovery is made all the more difficult by deeply buried remains. The dispersed spatial distribution also makes stratigraphic chronology building difficult, especially when many Preclassic burials are accompanied by no more than a single ceramic vessels and little carbon is present to permit radiocarbon dating. Nevertheless, each Maya site that is excavated adds new pieces of knowledge to our overall understanding of this early time.

Preclassic remains at Caracol are spotty in their distribution. Those that have been recovered indicate that the time depth for the period is relatively shallow in the site epicenter, going back probably only into the second century B.C. However, one excavation in the settlement area recovered Preclassic remains dating several centuries earlier, indicating that people occupied the Vaca Plateau during the Middle Preclassic Period. While the earliest Maya may not be well represented in the Caracol investigations, the recovered materials are significant in demonstrating both the existence of early occupation in the Maya Mountains, away from permanent natural sources of water, and the timing and degree of Preclassic ceremonialism, especially as related to Baktun ceremonies.

Settlement Pattern Investigations: Special Deposit C119D-1

As a part of a National Science Foundation-sponsored northeast Caracol settlement

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survey undertaken from 1994 through 1996 in an area ranging from 1 to 5 km distant from the site epicenter, approximately 40 residential groups were tested by a series of limited excavations and 2 residential groups had more extensive excavation. In both of the intensively excavated groups, Preclassic Period remains were recovered. The residential group nicknamed “Veracruz,” located 4.5 km distant from the epicenter, witnessed the axial penetration of 5 of its 7 structures. The single western building in Veracruz was excavated with a 1.5 m by 3.3 m trench that was dug to bedrock (Figure 1). The western building was found to consist of a very decomposed building substructure set atop a larger platform, which itself had been raised in the past. At the base of the platform fill, two capstones were encountered set above a depression in the bedrock. Beneath the stones was a single flexed adult individual. Two ceramic vessels (1 whole and 1 partial) were set above the individual’s head on an adjacent limestone ledge and a large flint axe was set under the knees; also recovered with the burial was a pyrite-inlaid shell and a jadeite bead. The recovery of this burial was fortuitous, as it is not directly related to the upper constructions. The pottery that accompanied this burial as well as the sherds included in the matrix that covered the body are the earliest yet recovered from Caracol. Stylistically, these materials may be dated to the Middle Preclassic era.

Settlement Pattern Investigations: Special Deposits C118F-7 and C118F-8

The second residential group intensively investigated under the NSF-sponsored northeast Caracol settlement research was nicknamed “Monterey” and was located approximately 250 m northeast of Veracruz (and nearly 5 km distant from the epicenter). Five buildings were investigated within the Monterey residential group during the 1995 field season. An axial trench, measuring 8.4 m by 1.5 m, penetrated the eastern building and the plaza in front of it; this excavation succeeded in finding 7 caches and 4 burials (Figure 2). Four caches located within the core of the building may be related stratigraphically to each other and to eight sequent floors. The first two caches placed within the building are of interest here. The earliest cache (S.D. C118F-8) may be dated to the Late Preclassic Period based both on stratigraphy and on the style of the ceramic container found in the cache. A stratigraphically later deposit, S.D. C118F-7, is viewed as being transitional, dating to somewhere between the Late Preclassic and Early Classic. Special Deposit C118F-8 was placed within a specially constructed cavity sealed beneath the lowest floor (Floor 8) in the building. Three separate “finger bowl” vessels, associated with human finger bones, were set to one side of a larger urn. The urn itself was sealed with a lid and contained 6 shell beads and 3 small pieces of raw jadeite as well as a large limestone rock. Sometime after this deposit was made, the building was elevated 20 cm and a new plaster floor (Floor 7) was laid down. Before the next construction raised the building a further 35 cm, a hole was cut into Floor 7 and a lidded urn was placed into this hole, covered with a capstone, and then sealed within the fill for the new construction that was capped, in turn, by Floor 6. The contents of Special Deposit C118F-7 were more elaborate than those within the earlier urn. Like the materials in the earlier urn, however, limestone rocks (n=7) were layered above the objects placed in the bottom of the vessel. Objects in the urn included: 3 “Charlie Chaplin’s” (e.g. Moholy-Nagy 1985:154), one each of obsidian, stone, and shell; 3 beads, one each of jadeite, quartzite, and shell; 2 flamingo-tongue drilled shells; 2 small drilled clam shells; and 2 other shell

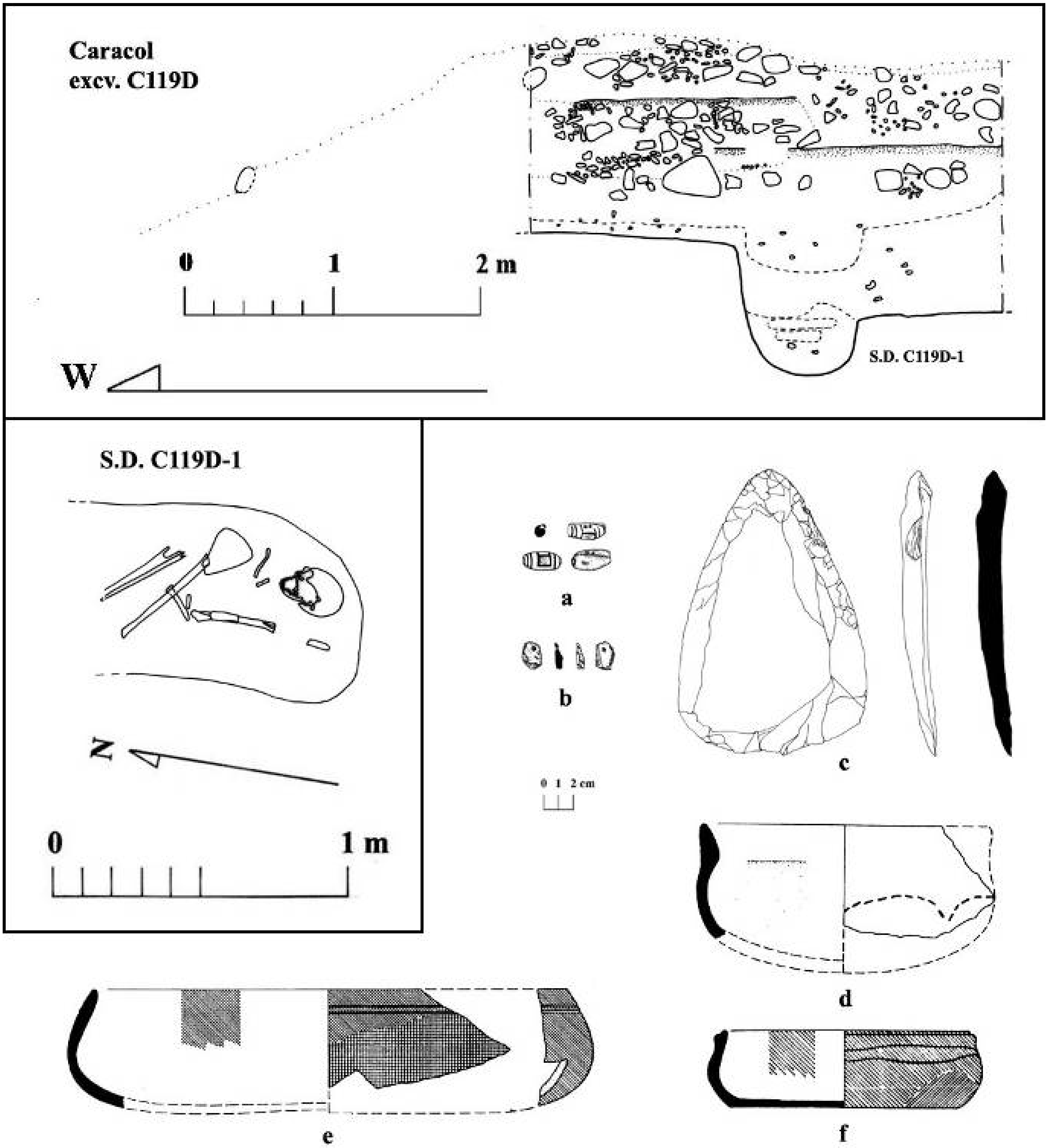

Figure 1. Caracol excavation C119D and associated burial, S.D. C119-1: a. *oliva* shell with hematite inlay; b: jadeite bead; c. flint axe; d.-f. pottery vessels (no types designated).

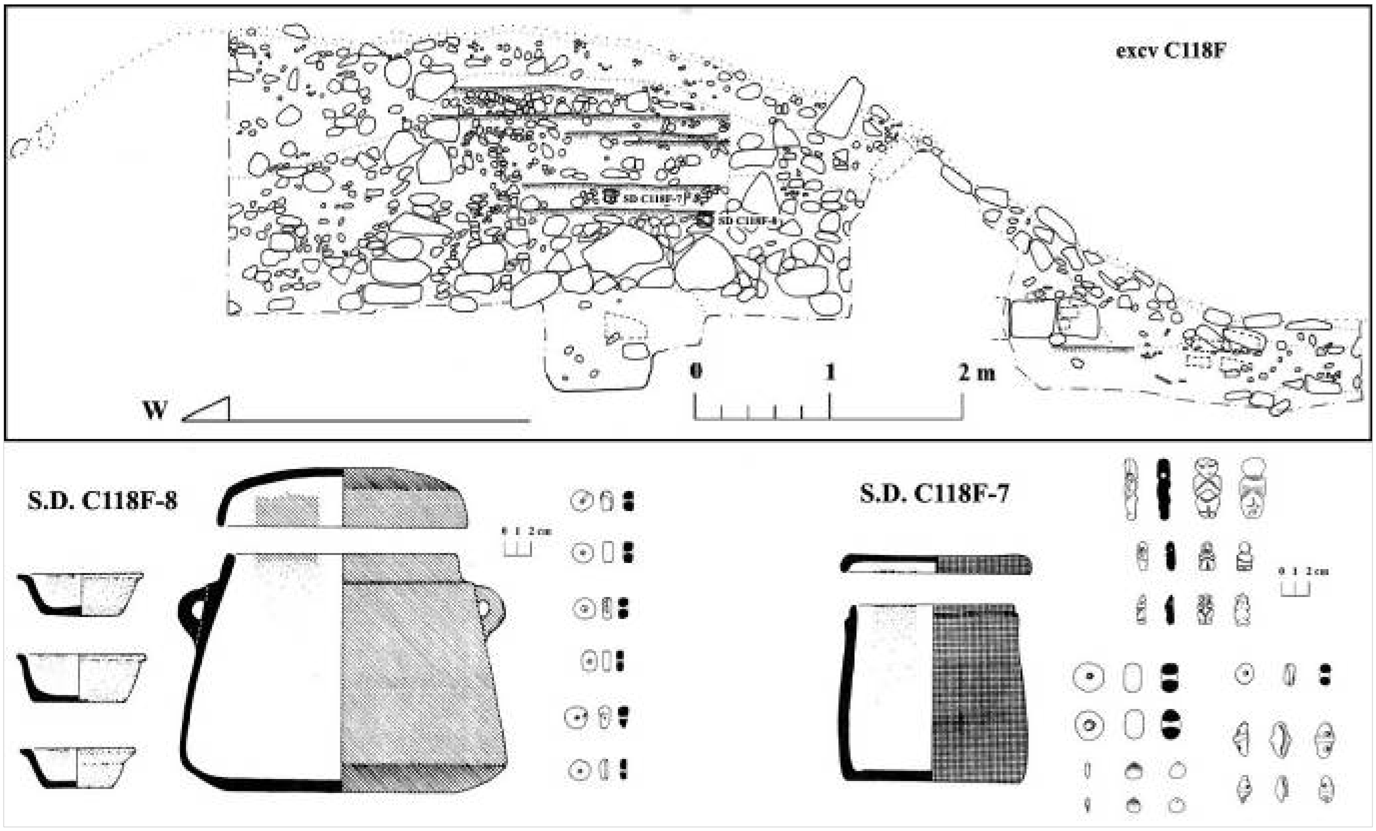

Figure 2. Caracol excavation C118F and early caches, S.D. C118F-8 and C118F-7; contents of two caches both illustrated.

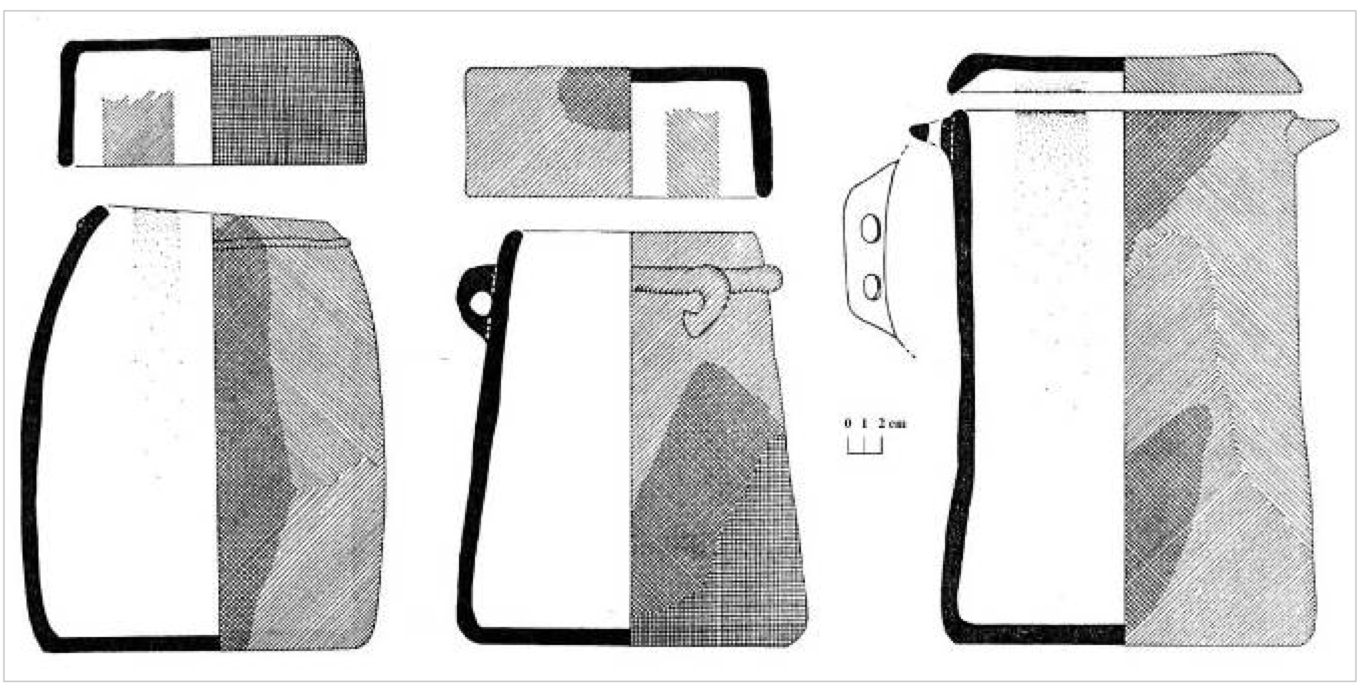

Figure 3. Cache vessels associated with Cahal Pichik Structure B (no types designated).

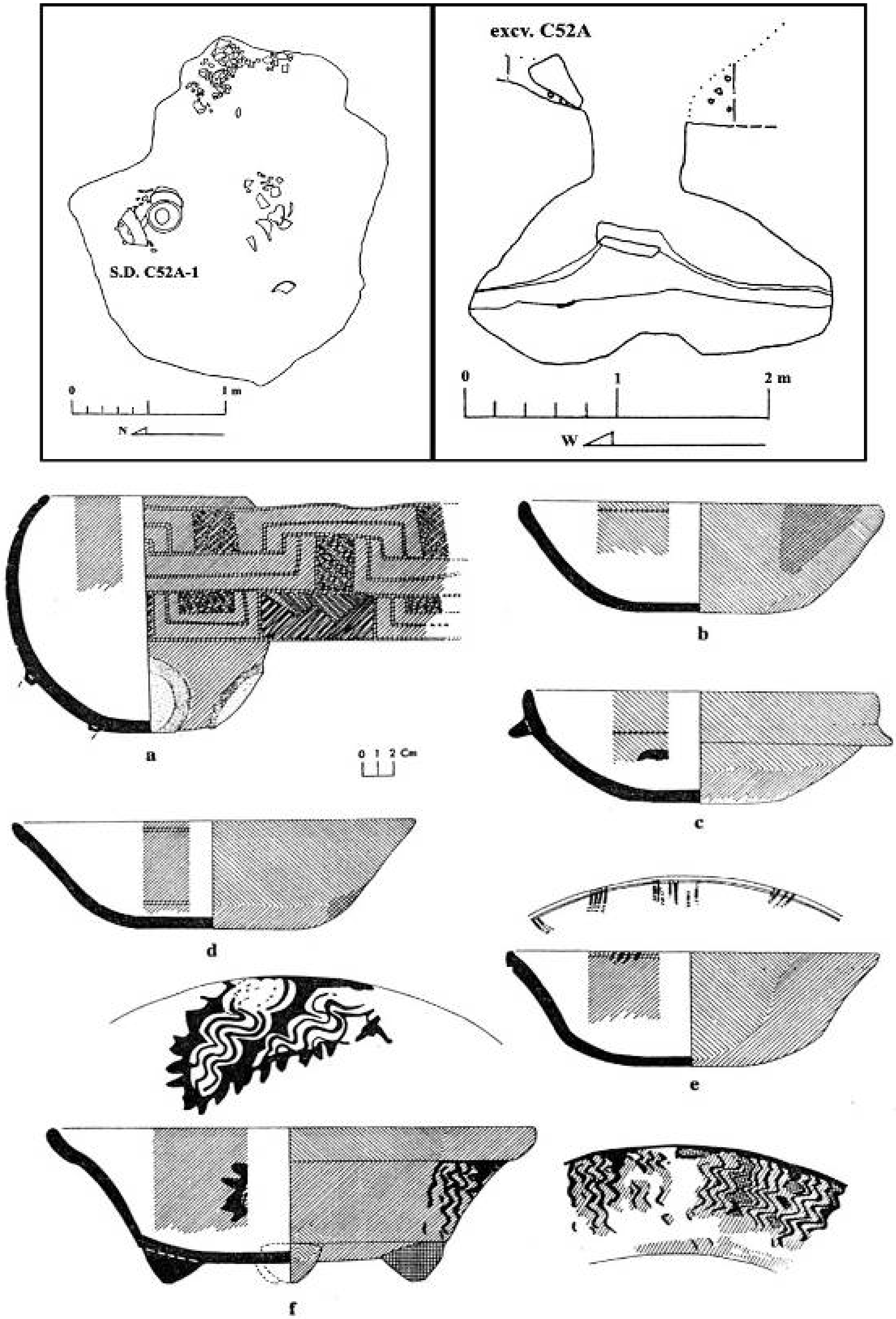

Figure 4. Special Deposit C52A-1 from within a chultun in excavation C52A: a. possibly Cay Incised; b.-e. Laguna Verde Incised; f. Sacluc Black-on-Orange

fragments. The subsequent cache within this stratigraphic sequence (S.D. C118F-6) was located two floors higher on top of Floor 4, was dated to the Early Classic, and included 2 soapstone and 2 shell Charlie Chaplin's as well as a Lion's Paw fan-shell.

Settlement Pattern Investigations: Cahal Pichik

In 1989 a causeway was followed from the Caracol epicenter to the terminus "site" of Cahal Pichik (A. Chase and D. Chase 2001), some 7.9 km distant. At this time a brief reconnaissance was undertaken of the site by the project. Cahal Pichik had originally been worked on by J. Eric S. Thompson (1931); more recently, John Morris (2004) has built on and better contextualized this earlier work. Thompson excavated several sites in the Mountain Cow region and illustrated Preclassic sherd materials from this area. One of the structures investigated by Thompson was Structure B at Cahal Pichik. Here, Thompson (1931:Plate 36) found a lip-to-lip cache located beneath a bench or altar set at the rear of a room atop the 13 m high substructure; the form of the containers indicates that this deposit can date no later than the Early Classic Period. By 1989 looters had made additional penetrations into the summit of Structure B and the Caracol Archaeological Project recovered several vessels from near the summit of this building. These vessels came from more deeply buried levels than those probed by Thompson. The vessels are clearly cache containers, most likely of Late Preclassic date (Figure 3).

Settlement Pattern Investigations: Special Deposit C52A-1

One of the hallmarks of chultuns at Caracol is that they often contain burials (A. Chase and D. Chase 1994, 2005; Hunter 1994). Although the material within these chambers often dates to the Early Classic, occasionally Preclassic deposits are found. This is the case for one chultun excavated within a residential group (nicknamed "Blanca") some 3 km southeast of the site epicenter (Figure 4). Excavation here recovered three discrete clusters of bone within the base of the chultun. One of these clusters was the burial of 3 individuals (ages 5, 35, and undetermined) associated with 5 pottery vessels dating to the Late Preclassic Period. A sixth vessel with its tetrapod supports removed was found broken on the chultun floor as well as on bedrock at the entry point to the chamber.

Caracol Epicenter Investigations: Northeast Acropolis

The Structure B34 locus was intensively investigated during 1995 and 1996, resulting in the recovery of 9 burials and 6 caches. One of the burials recovered in 1995, a woman placed in front of Structure B34, traditionally would be placed in the Terminal Preclassic Period; however, the combined pottery suggests the possibility of Protoclassic dating. Special Deposit C117B-5 contained minimally 32 vessels, 2 ceramic figurines, 2 bone spindle whorls, 1 drilled river cobble, and 1 stingray spine (see A. Chase and D. Chase 2005:figure 1). In death she was also adorned with the trappings of the Maya moon goddess Ixchel, complete with dog teeth anklets and an elaborate mantle made up of over 7,000 shell and jadeite beads as well as a dog teeth fringe (see Rich 2003). The ceramics in this interment suggest a possible date of approximately A.D. 150 for the deposit.

Stratigraphically linked to this burial through sequent floors is a cache excavated in 2002 in front of the adjacent Structure B33. Special Deposit C117D-1 was sealed beneath the same floor that was penetrated

to place S.D. C117B-5; thus, it must be dated to an earlier time frame than the burial. The cache consisted of 2 unslipped bowls set lip-to-lip. Resting on the bottom bowl were 9 pomacia shells, 1 jadeite bead, 1 carved miniature stingray spine in mica, and 1 carved miniature stingray spine in conch shell.

Deeper excavation both in front of Structure B34 and in front of Structure B33 yielded deeply buried Preclassic constructions. While only the corner of a northern building was found in the 2002 probe, the 1996 excavation tunneled around and into the eastern Preclassic building to gain some semblance of its plan and time depth. In plan, the eastern Preclassic building in the Caracol Northeast Acropolis resembles the earliest structures recovered in Tikal's North Acropolis, specifically Tikal Structure 5D-Sub 11, which Coe (1990:242) dates to approximately B.C. 50. A layer of trash was found on the bedrock beneath the eastern Preclassic building and several partial vessels of Late Preclassic date were reconstructed from this material that would accord well with this dating.

Caracol Epicenter Investigations: Caana and South Acropolis

There was also substantial Preclassic activity in the vicinities of the South Acropolis and Caana. During the 2003 field season, a chultun was excavated in the South Acropolis that contained a single unit refuse deposit at its base from which approximately two dozen ceramic vessels could be reconstructed. These materials may be dated as transitional between the Late Preclassic and the Early Classic eras (see A. Chase and D. Chase 2005: figure 2). Excavations within Caana also attempted to find earlier remains. In most cases, deep penetration was halted by substantial quantities of dry core fill. However, it did prove possible to trench and tunnel into the Structure B19 substructure. An unsealed Terminal Classic cache was found in the summit floor of Structure B19-1st (A. Chase and D. Chase 2004: figure 16.2). Based on a Special Deposit containing the body of a child, a finger cache, and a complete lidded incense burner, the summit fill for Structure B19-1st was placed at the beginning of the Late Classic Period. Penetration into Structure B19-2nd revealed several Early Classic cache deposits placed into the surface of B19-3rd. Deep tunneling in B19-3rd during the 1995 field season revealed only Preclassic ceramics in the core of this construction, suggesting that Structure B19-3rd and Caana had reached a height of 38 m (out of a preserved 43.5 m) by the end of the Late Preclassic Period.

Epicenter Investigations: A Group

The buildings in the Caracol A Group have long been known to form a Commemorative Astronomical Assemblage or "E Group" (A. Chase and D. Chase 1995). Based on the archaeological work in Group E at Uaxactun, Guatemala (Ricketson and Ricketson 1937; Rupert 1940), this building arrangement was originally dated to the Early Classic Period. Further archaeological work, however, has demonstrated that some of these complexes date into the Middle Preclassic era (A. Chase 1983; Hansen 1992; Laporte and Fialko 1990), but that their heaviest use may be dated to the transition between the Late Preclassic and Early Classic Periods (A. Chase 1985; A. Chase and D. Chase 1995). The complex is generally agreed to represent some of the earliest public architecture at any given Maya site and to have been focal for that site's initial development as an urban center. As we (1995:100-101) have previously noted, an E Group "served as an architecturally standardized focal assemblage for integrating Late Preclassic and subsequently Early Classic Maya."

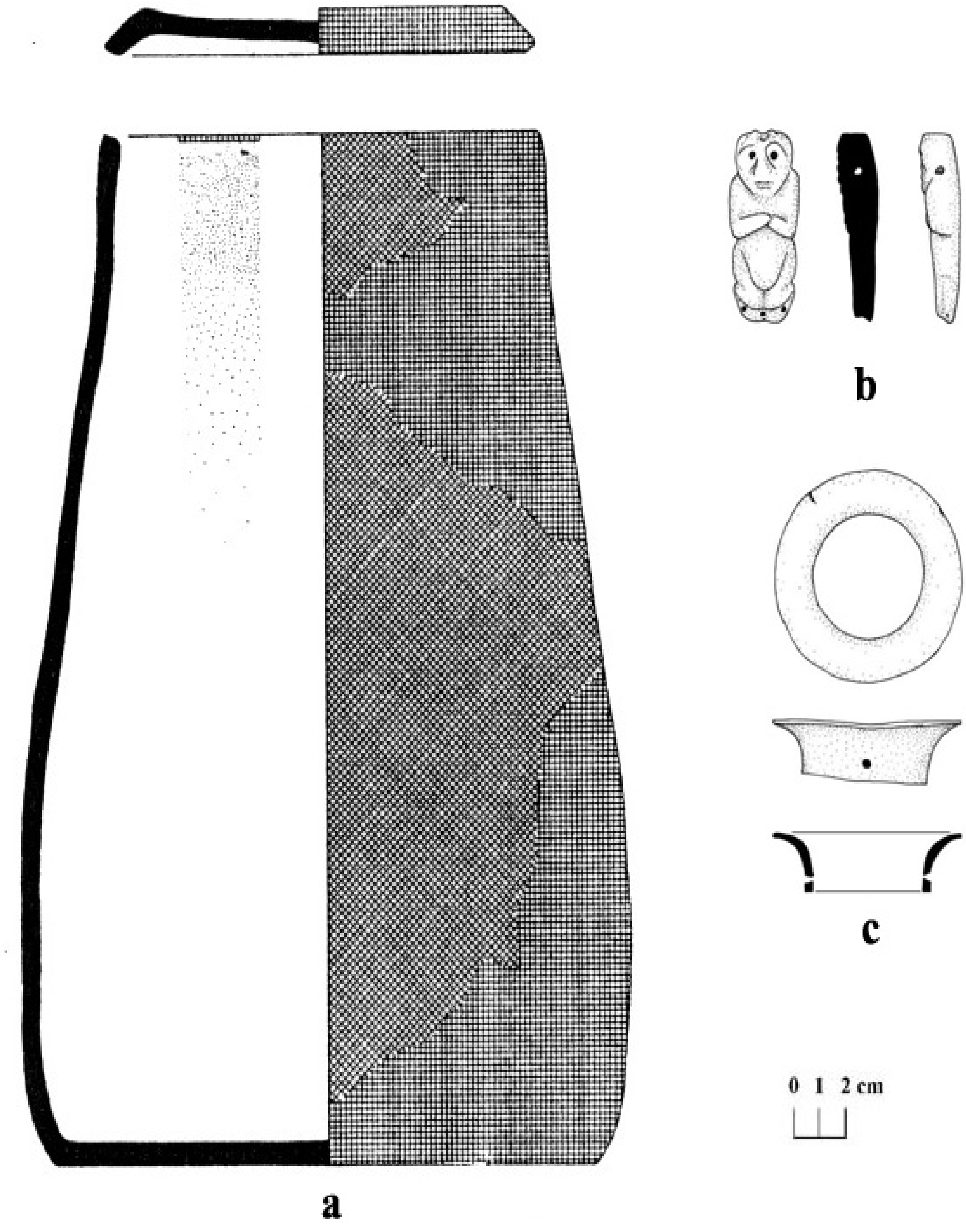

Figure 5. Cache vessel and two associated pieces of jadeite from within Caracol Structure A2.

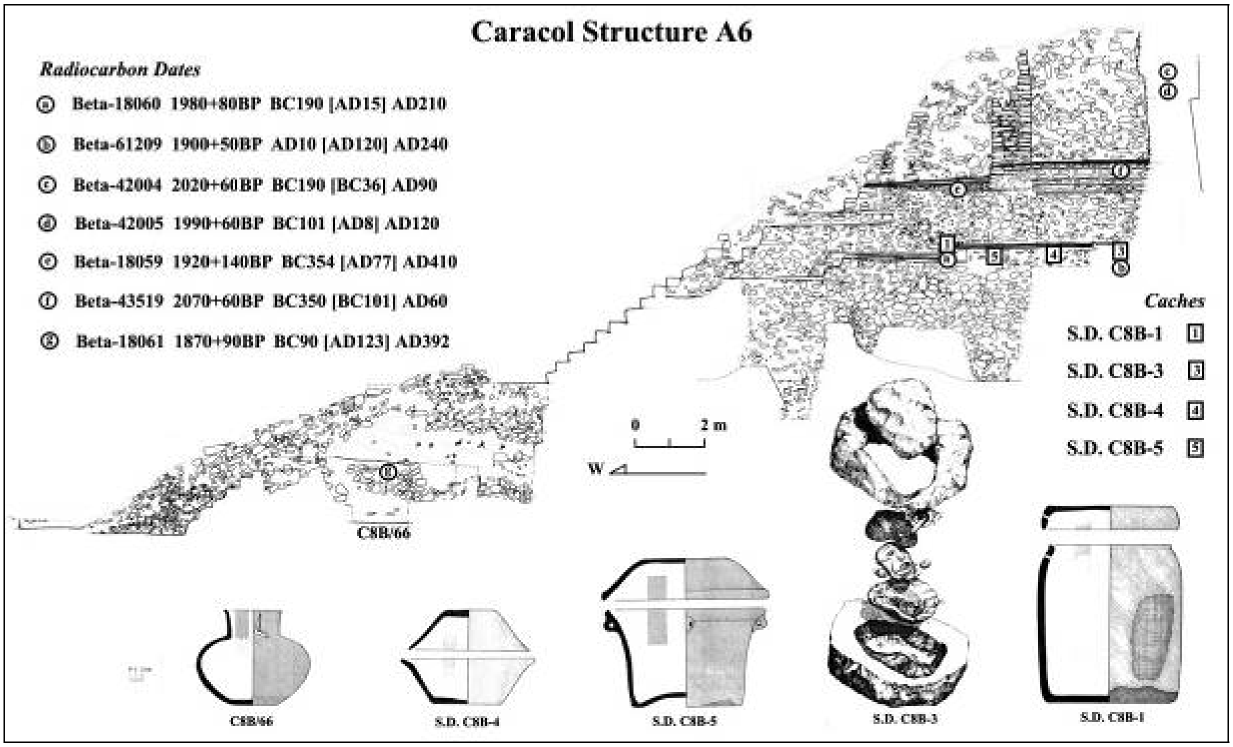

Figure 6. Section through Caracol Structure A6 illustrating placement of Preclassic vessels and caches as well as the location of associated radiocarbon dates.

populations, first ritually and then dynastically."

The Caracol E Group is arranged around the site's A Plaza and is primarily defined by two constructions: the 25 m high Structure A2 on the western side of this plaza and the 85 m long raised platform on the eastern side of this plaza. The eastern platform underwent a series of building phases to reach its present state (see A. Chase and D. Chase 1995: figure 60). Initially constructed in the Late Preclassic Period, the eastern platform consisted of a long linear platform. Immediately east of this linear platform, Structure A6-2nd was constructed atop fills that may hide even earlier constructions. Two small structures were also added to the northern and southern extremes of the linear platform. With the construction of Structure A6-1st, the entire platform was raised in height and engulfed the smaller end constructions. Two structures (A5 and A7) located on the northern and southern sides of Structure A6-1st were added in the Early Classic Period. Two other structures (A4 and A8) were added to the northern and southern ends of the platform in the Late Classic Period. A final structure was sandwiched in between Structures A5 and A6 at an even later date. Structure A6 continued to be used into the 10th century; the interior floors of the building were covered with ash, faunal material, small artifacts, and reconstructible ceramics (A. Chase and D. Chase 2004; D. Chase and A. Chase 2000).

Structure A2 dominates the western side of the Caracol A Plaza. Its summit was excavated in 1990 and the base was penetrated in 1999. The basal penetration in 1999 recovered only Preclassic sherd materials in the construction core of Structure A2 and, apart from a single earlier basal step, could find no evidence for any other earlier construction. The excavation of Structure A2 undertaken in 1990

penetrated its summit to a depth of approximately 5 meters. In the course of these summit excavations, Caracol Stelae 22 and 23 were discovered (Grube 1994: figures 9.3 and 9.5); Caracol Stela 23 is an 8th cycle monument.

Also uncovered on the summit during the 1990 field season were four caches and one burial. The burial appeared to have been of Terminal Classic date, as was one of the caches placed beneath Altar 17. Two of the caches within the summit construction core were tentatively placed as being Early Classic in date; one cache consisted of 10 obsidian eccentrics, 1 obsidian lancet, and 4 jadeite spheres placed directly in fill; the second cache consisted of two large lip-to-lip bowls containing 6 pieces of coral and 4 shell fragments.

The third summit cache was located deep within the core of the structure in an open-air cist covered with capstones. A pyrite bead, a shell ring, and an unworked marine shell were found on top of the capstones. Once the capstones were removed, a large amount of material was recovered both outside of and within the tall ceramic urn (Figure 5) that occupied the airspace beneath the capstones. The urn was filled with a dirt matrix; excavation of this matrix revealed a host of artifacts in no particular order; these included: 11 unmodified sea shells, 1 shell tine, 9 shell fragments, 1 jadeite bead, 3 jadeite chips, 1 stingray spine, 4 shell Charlie Chaplins, 1 spondylus shell bead, 1 pearl bead, 2 drilled shells, 6 shell beads, 2 circular shell inlays, a large number of seed shells, a large amount of faunal material, and a red substance that was probably hematite. Material recovered in the cist outside the urn included: 1 jadeite figurine, 1 jadeite earflare, 2 pieces of coral, 7 whole marine shells, 2 drilled shells, 1 shell Charlie Chaplin's, 2 stingray spine fragments, faunal material, and 1 rounded sherd. The peculiar distribution of this material in and outside of the urn and even on top of the capstones raises the issue as to whether or not this deposit was re-entered and disturbed in antiquity (see D. Chase and A. Chase 2003 for a description of kinds of tomb re-entries). The contents of this cache are broadly similar to the Structure A6 barrel cache described below. An earflare like the one found in this cache was also recovered in a residential cache, S.D. C147B-2, of unknown date north of the epicenter; as in the Structure A2 cache, this earflare was associated with a single jadeite figurine. The Structure A2 cache is dated as transitional between the Late Preclassic and Early Classic Period; it is probably not as early as the caches found in Structure A6.

Structure A6 dominates the eastern side of the Caracol A Plaza. Excavations were undertaken in Structure A6 in 1985, 1986, 1990, and 1991. These resulted in the recovery of a detailed stratigraphy related to two versions of Structure A6 as well as 5 caches and an early refuse deposit (Figure 6). Four of the caches and the early refuse deposit all date to the Late Preclassic Period. Most impressive are the four recovered caches, which may be dated by a series of radiocarbon dates as being no later than A.D. 10 to A.D. 60. The front refuse deposit yielded a date of 1870+90 BP (BC 90 [AD 123] AD 392).

The two earliest caches were both sealed within the core of Structure A6-2nd. Once the upper floor of Structure A6-2nd had been removed, a second lower floor was encountered. Cut through this floor was a circular pit that had been filled with marl; at the base of this pit S.D. C8B-4 had been placed. Special Deposit C8B-4 consisted of a pair of lip-to-lip bowls bedded on 1,165 grams of crushed and broken greenstone beads (estimated at over 200 beads). One shell bead and one jadeite bead comprised the entire contents of the lip-to-lip vessels. Following the excavation of this cache, the

second floor was removed to reveal a third floor for Structure A6-2nd. This floor, too, was penetrated by a single pit (2 m west of the upper deposit). A lidded urn, S.D. C8B-5, was recovered from within this pit. The contents of this urn included 1 spondylus shell pendent, 1 worked flamingo-tongue shell, 2 stingray spines, 1 shell bead, 1 jadeite bead, 1 pyrite mirror fragment, and the bones of 2 burnt quail. Both of these caches and their associated materials were sealed within Structure A6-2nd and certainly date well before the caches associated with Structure A6-1st.

Immediately prior to the construction of Structure A6-1st, a pit was dug into the uppermost floor of -2nd at its juncture with what had been its rear wall. A natural stone geode, containing an entry hole that had been sealed with red mud set around an artificially made stone lid, was set in the bottom of this pit. The open-air cache was then capped with stones and sealed under a layer of marl, which in turn was directly encased by the fill for Structure A6-1st. Inside the geode (S.D. C8B-3) was a layered set of artifacts, which had once been wrapped within a cloth, pieces of which were still preserved (see A. Chase and D. Chase 1995: figure 58). Set above paired spondylus shells was a single jadeite earflare with its central jadeite cylindrical spire still attached with stucco to the flare and with the remnants of a string still within this hollow bead – to which had surely been tied a pearl bead that was also recovered. Set around and in the spondylus shells were 913 pieces of malachite (167.8 grams) as well as 6.45 grams of jadeite chips. Four pumpkin seeds and one unidentified seed were also recovered from above the upper spondylus shell. Set in the lower of the two spondylus shells was a jadeite mask arranged in a bed of hematite with a jadeite jaguar claw pendant at its throat and 1 spondylus and 1 jadeite bead to either side of the head, functioning as earrings. In the base of the stone geode, 684 grams of liquid mercury was recovered. Carbon associated with this cache yielded a date of 1900+50 BP (AD 10 [AD 120] AD 240).

Following the placement of S.D. C8B-3, Structure A6-1st was constructed. Over 2 meters of vertical fill were carefully laid as the foundation for this building platform. During a pause in the fill placement and prior to any formal building construction, a pit was dug back into Structure A6-2nd at the western extreme of what was to become the A6-1st rear room. A lidded barrel (S.D. C8B-1) was set in the bottom of this pit on top of approximately two dozen small land and sea shells. The contents of the urn were layered (see D. Chase 1988). The bottom of the urn was filled with 345 malachite pieces, upon which 2 mirrors had once been placed, indicated by the recovery of 279 pyrite/hematite inlay pieces and their decomposed backings. The upper part of the barrel was filled in with a beehive or honeycomb that was still intact. Immediately below this honeycomb were preserved pine needles, 27 pumpkin seeds, and 4 other unidentified seeds. Beneath these terrestrial items, but above the lower malachite and mirrors, were a host of other items (see Figure 7 for some of these): 41 stingray vertebrae, 4 whole stingray spines, 5 fragmentary stingray spines, 4 shark's teeth, seaweed, faunal material, cinnabar, burnt wood (?), 1 jadeite pendant, 1 jadeite turtle, 1 jadeite "whale," 1 jadeite flower earflare with central tubular bead, 9 jadeite beads, 1 large pearl, 1 small pearl, 1 shell fire serpent, 4 shell Charlie Chaplin's, 2 shell turtles, 3 shell "spines," 1 shell point, 2 pointed shells, 4 circular shell markers with inlays, 1 piece of coral, 1 shell with leather (?) attached to it, 15 natural shells, 1 large

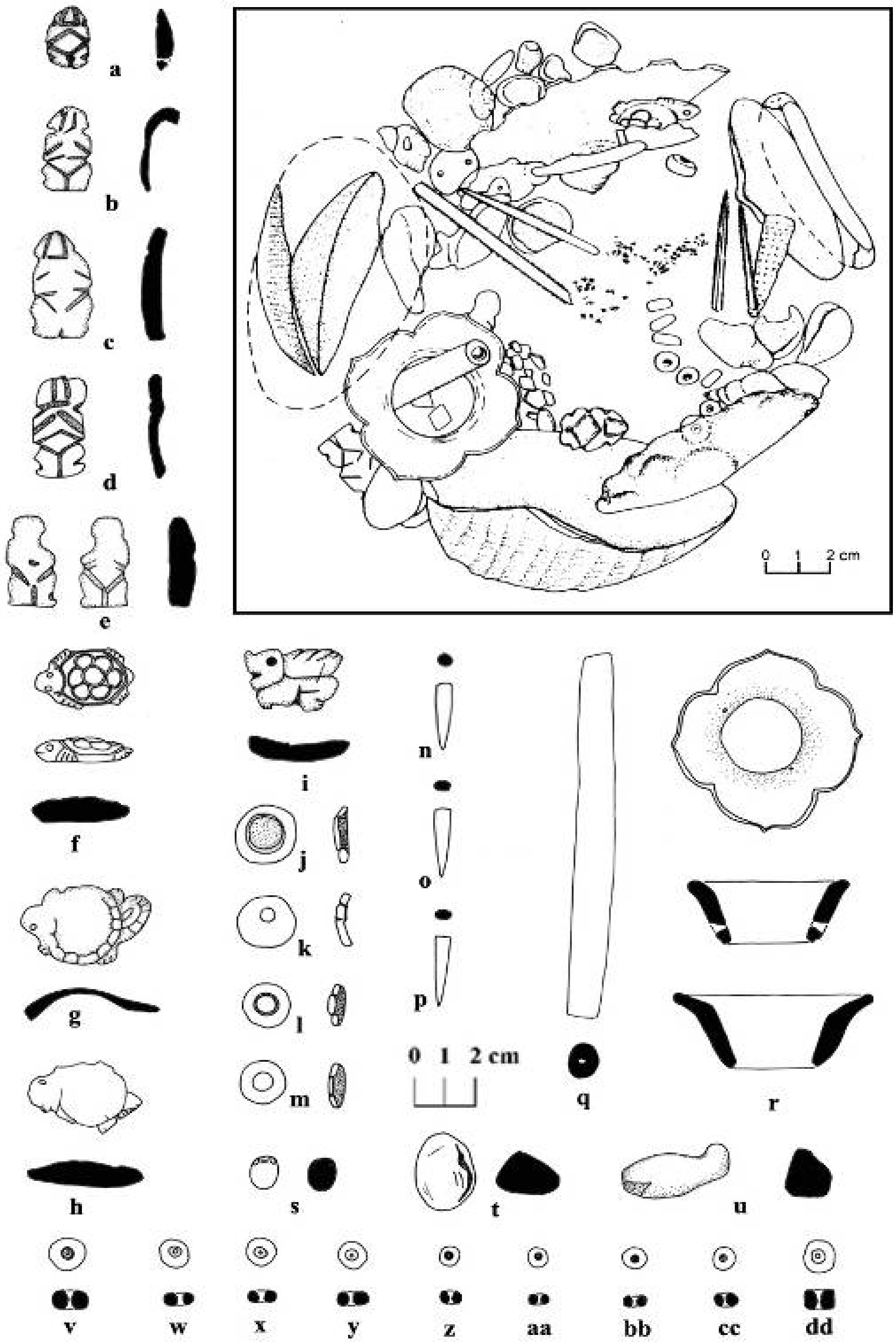

Figure 7. Partial contents of Caracol Special Deposit P8B-1 showing jadeite (a, f, q, r, t, u, v-dd), shell (b-e, g-p), and pearl (s) artifacts.

spondylus shell, 2 large scallop shells, 1 large clam shell, and 1 large fan shell. The large shells were placed in the urn oriented to cardinal directions, perhaps color-coded (D. Chase 1988; D. Chase and A. Chase 1998). Carbon from within the urn yielded a date of 1980+80 BP (BC 190 [AD 15] AD 210). Both of the caches associated with Structure A6-1st appear to have acted as cosmograms to center the building and, by extension, the site of Caracol.

Following the placement of this second cache, the formal construction of Structure A6-1st was finished. It may be that a wall cache was included above the decomposed beams in the southern interior doorway for a set of large jadeite earflares and a conch shell trumpet were recovered within the building collapse – well above the floor – in the interior of the edifice in the vicinity of this inner doorway. Structure A6-1st is called the "Temple of the Wooden Lintel" because of preserved wooden beams in its interior northern door. Portions of two of these beams, with bark attached, were radiocarbon dated to 2020+60 BP (BC 190 [BC 36] AD 90) and 1990+60 BP (BC 101 [AD 8] AD 120). Additional carbon samples were gathered from in situ burning on the sealed floors of Structure A6-1st. Two of these samples were submitted for dating because each was sealed and were directly above one of the two caches for Structure A6-1st. The first sample came from carbon on the 3rd lower floor in the rear room directly above S.D. C8B-3; it dated to 2070+60 BP (BC 350 [BC 101] AD 60). The second sample came from burning on the 4th lower floor in the front room directly above S.D. C8B-1; it dated to 1920+140 BP (BC 354 [AD 77] AD 410). Taken together, these four dates in combination with the two from S.D.s C8B-1 and C8B-3 indicate that the construction of Structure A6-1st was accomplished between A.D. 10 and A.D. 60.

Discussion

Krejci and Culbert (1995:111) surveyed Preclassic caching practices in the Maya lowlands [n=84] and commented on the overall poverty of items included within them, noting "they contain few objects and exhibit little variety. They are, in a word, very dull." Most Preclassic caches consisted of no more than 1 or 2 jadeite beads or shell fragments with possibly flint or obsidian blades within a single pottery vessel; alternatively, a human skull and/or bones were included between two vessels. "The poverty of Preclassic caches is reflected across all the zones in our sample and is true even at sites where major architecture of Preclassic date was excavated" (Krejci and Culbert 1995:111). They (1995:113) further noted a dearth of caches at Tikal between A.D. 1 and A.D. 200 and commented that only after A.D. 325 did caches contain a great wealth of items. According to their study (Krejci and Culbert 1995:109), jadeite earflares, taken as a sign of status differentiation in wider Maya society, did not appear in caches until the Early Classic Period.

Excavations in the vicinity of Caracol's A Group have recovered 19 caches. Of these 19 caches, 5 may be assigned a Preclassic date: 1 cache from Structure A2 and 4 caches from Structure A6. The 4 caches from Structure A6 are bounded by a series of radiocarbon dates and may be dated to no later than A.D. 10-60; a similar or slightly later date is probable for the Structure A2 cache as well. Based on the recovery of certain artifacts in the collapse of Structure A6, it is also suspected that a wall cache of Preclassic date was located above the beams of an inner door of the building's rear room.

Caracol caching practices in the Preclassic Period appear to be precocious; especially when they are compared with the

dismal picture conjured up by Krejci and Culbert (1995) for the rest of the Preclassic Maya area. Most of the caches that can be assigned a dating to the Preclassic Period at Caracol provide evidence of significant ritual and "wealth" up to 300 years earlier than is found in the central Peten. The richness and diversity of the Caracol caches contrasts greatly with caches of similar date from Tikal and Uaxactun and also provides precedence for the caching patterns found at those two sites much later in the Early Classic Period. The opulence of the Caracol caches, their physical association with an early E Group (A. Chase and D. Chase 1995; or Commemorative Astronomical Complex, e.g. Laporte 1996), and their dating to between A.D. 10 and A.D. 60 further suggests that an argument can be made, following Rice (2004), that Caracol was a Preclassic *may ku* – or major center that hosted important cyclical ceremonies for a large portion of the Southern lowlands.

The dating of the Caracol caches in Structure A6 and, indeed, the dating suggested for Structure A6-1st – and, by extension, for the Caracol Commemorative Astronomical Complex – may be used to suggest that the physical construction and dedication of this group was undertaken in conjunction with – and, perhaps to specifically celebrate – both the arrival of Baktun 8 (8.0.0.0.0.0 Katun 9 Ahau) in A.D. 41 and the start of the *u kahlay katunob* or 256-year cyclical short count 20 years earlier in the Katun 11 Ahau ending in 7.19.0.0.0 or A.D. 21. The start of 8.0.0.0.0 or the Baktun 8 cycle was certainly of importance to the Maya – as was the Katun 11 Ahau start of a 256-year cycle (see Puleston 1979 and A. Chase 1991). The conjunction of the two cycles within a 20-year time span was also surely noticed by the ancient Maya. This 20-year span was as close as the Preclassic or Classic Period Maya would come to a temporal conjunction of these two cycles – with the exception of the actual conjunction of Katun 11 Ahau and Baktun 6 in B.C. 747. Thus, the ritual caches associated with Caracol Structure A6 and, by extension, Caracol Structure A2 – the two major components of the site's Commemorative Astronomical Complex – may be linked temporally to activities that were undertaken to cosmologically center the site at the inception of Cycle 8.

Conclusion

Given the difficulties usually associated with recovering Preclassic Period remains, each site with reportable materials adds to our general interpretations of this time era. Preclassic deposits from Caracol, Belize, are not notable for their temporal priority. Given the extensive Late Classic built environment at Caracol, investigation of strictly Preclassic remains is particularly difficult; only one *excavated* locale clearly contained Middle Preclassic Period materials. However, the Caracol data are significant for their ability to define Late Preclassic ceremonialism to an extent not yet found elsewhere.

In contrast to current thought (Krejci and Culbert 1995), Late Preclassic caching practices at Caracol are prominent, impressive, and precocious. Five Late Preclassic caches investigated in the A Group vicinity presage defined Early Classic caching practices elsewhere in the Maya Lowlands by almost 300 years. Typical Late Preclassic Caracol caches contain multiple and varied items. Jadeite, shell, and other materials placed within stone and pottery containers appear to purposefully portray a now vanished cosmology. The cache items are often located around a central artifact – frequently a jadeite earflare or mask – and items were also layered and directionally oriented to reflect Maya worldview and probably myth. Stratigraphic associations and radiocarbon dates from the

caches themselves, from burnt floors above the caches, and from structural beams suggest that these elaborate ritual practices may have been correlated with significant calendrical cycles. Caches were placed and the final construction of the Structure A6 core was completed between AD 10 and AD 60. These dates correlate remarkably well with the arrival of Baktun 8 in AD 41 and the start of a 256 year *u kahlay katunob* in AD 21. Identification of the Caracol E Group with these important calendrical cycles also may be used to potentially date and explain the expansion of other E Groups throughout the Southern Maya lowlands and especially the southeastern Peten adjacent to Caracol, where Laporte (1996) has demonstrated a profusion of similar complexes. However, the extraordinary content of the Caracol caches suggests a prominent role for this site in these calendrical rituals and further suggests that even at this early date Caracol was at the acme of a wider political sphere.

While Preclassic investigations at Caracol have proved significant, these data still pose new questions. How large was the accompanying Late Preclassic occupation? Were Preclassic ritual seats of power primarily associated with calendrical time, following Rice's (2004) model? And, if so, how many of these Late Preclassic primary centers were there? Of even more interest, how does Caracol's prominence in the Late Preclassic relate to hieroglyphic texts indicating the start of its dynasty hundreds of years later (A. Chase et al. 1991)? Perhaps another katun of archaeological research will provide the answers.

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4 NORTHERN BELIZE AND THE SOCONUSCO: A COMPARISON OF THE LATE ARCHAIC TO FORMATIVE TRANSITION

Robert M. Rosenswig

The adoption of ceramics and sedentary village life are fundamental changes in the history of humankind. In all areas of the world, these developments were the precursor to population growth, full-scale agriculture and sociopolitical complexity. I explore this important transition in Mesoamerica through the comparison of the archaeological and environmental records of the Soconusco and northern Belize from 3000-800 BCE (uncalibrated). These regions represent the first and last areas of Mesoamerica where the Late Archaic to Formative transition occurred. I evaluate the different adaptive trajectories in these two lowland regions in terms of how the inhabitants of each area responded to the end of a world-wide drying event that lasted from approximately 1800-1600 BCE (uncalibrated), known in the Old World as the "4200 BP Event".

While a picture is emerging of the first ceramic using cultures in various parts of lowland Mesoamerica (e.g., Awe 1992; Blake et al. 1995; Clark and Gosser 1995; Hammond 1991; Joyce and Henderson 2001; McAnany 2004; Rosenswig 2000), their Late Archaic predecessors are known primarily from two contexts: the Soconusco (Voorhies 1976, 2004; Voorhies et al. 2002) and northern Belize (Hester et al. 1996; Iceland 1997; Iceland and Hester 1996; Loshe et al. 2005; Rosenswig and Masson 2001) (Figure 1 and 2) – although other lowland remains from this period have been reported elsewhere (e.g., Brush 1965; Mountjoy et al. 1972; Rue 1987; Wilkerson 1975; and see MacNeish 1992). The Soconusco and northern Belize represent the earliest and the latest regions of Mesoamerica where ceramics were adopted and village life documented (Table 1). Therefore, comparing the developmental trajectories of the two regions provides insight into the nature of these changes in adaptation. Why did ceramic use and village life emerge so early in the Soconusco? Why was the Late Archaic adaptation in northern Belize so successful that it was maintained for more than half a millennia longer? I begin this paper by comparing archaeological evidence from the Soconusco and northern Belize that is relevant to food production and human alteration of local environments. Then, evidence of a world wide climatic event beginning at approximately 4200 BP is reviewed (Weiss et al. 1993; Booth et al. 2005) and its relevance for Mesoamerica is explored.

Soconusco Late Archaic and Formative

The Archaic period in the Soconusco is defined by the Chantuto A (4000 - 3000 BCE) and Chantuto B (3000 - 1800 BCE) phases (Blake et al. 1995). Chantuto A is known from the single shell mound site of Cerro de las Conchas which is located in a mangrove-estuary environment and produced a number of C14 dates, but little information pertaining to the emergence of agriculture or settled life is currently available (Blake et al. 1995). The Chantuto B phase is known from five estuary shell mound sites and the upland site of Vuelta Limon which have been excavated by Barbara Voorhies (2004). The estuary sites are interpreted as seasonal resource

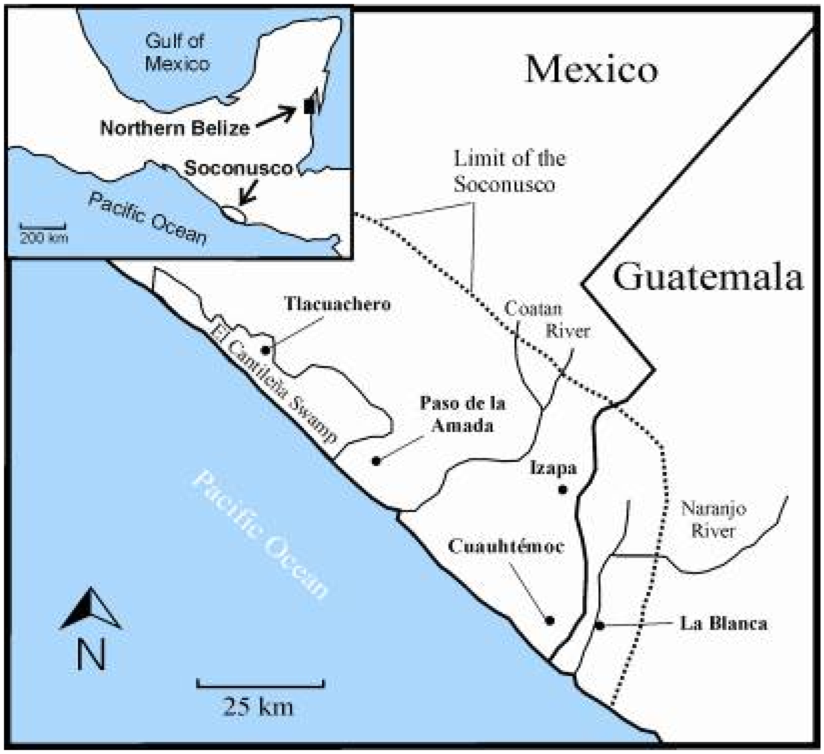

Figure 1. Soconusco Late Archaic and Formative sites mentioned in the text.

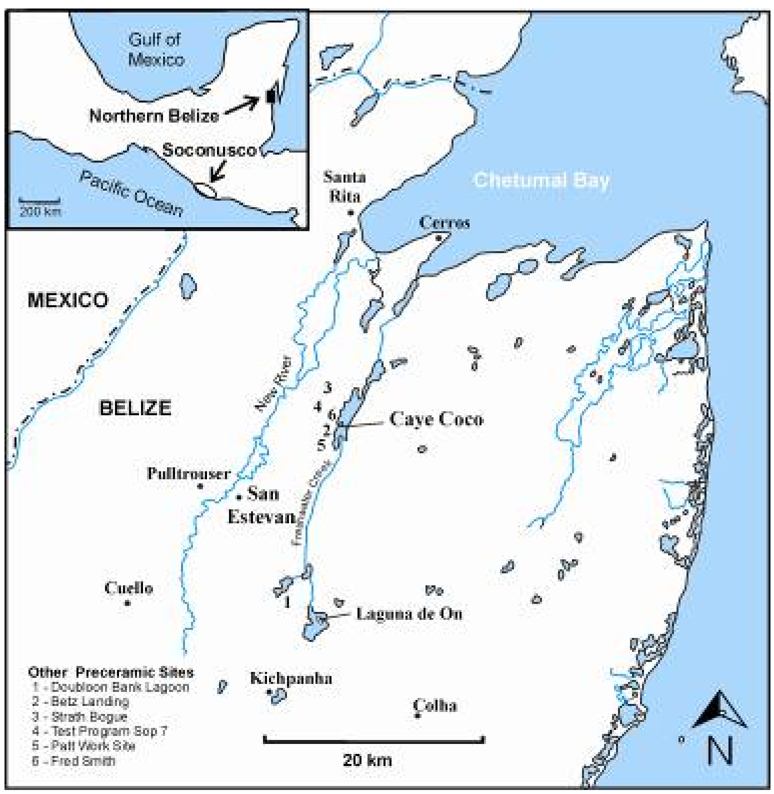

Figure 2. Northern Belize Late Archaic and Formative sites**.**

Years BCE	Soconusco	Northern Belize	Human-Environment Relationship
	Conchas	Swazey	First Evidence of Maize as a Staple Crop
900 1500/1600	Jocotal Cuadros Cherla Ocós Locona Barra	Late Pre-Ceramic	Intensified Horticultural Adaptation
Hiatus			4200 BP Event
1800/1900 3000	Chantuto B	Early Pre-Ceramic	Human Disturbance of the Environment

Table 1. Chronologies of the Soconusco and Northern Belize.

procurement locales and Vuelta Limon as a base camp site (Voorhies 1996a, 1996b).

The site of Tlacuachero is a Chantuto B period shell middens. A large, prepared clay surface was encountered with post holes forming two oval structures, one measuring 4 x 8m (Voorhies 1976: 38; Voorhies et al. 1991). This site was seasonally occupied to procure clam, fish, turtle and other marine resources and the tools recovered included milling stones and hammer stones. In addition, 57 obsidian flakes were found at the site and trace element analysis indicates that these Archaic peoples were obtaining obsidian from Highland Guatemala (Nelson and Voorhies 1980).

Two burials have been excavated from the Tlacuachero site and one of them, an adult male, had extremely worn teeth (Voorhies 1976: 67). Isotopic analyses of these burials indicate a reliance on C4 plants, which includes maize (Blake et al. 1992). Extensive tooth wear is consistent with a diet that includes a lot of seeds and grains. However, Blake et al. (1995: 167) suggest that these isotopic results may also be due to high levels of consumption of marine resources.

Phytoliths have been analyzed from the Tlacuachero midden and sediment cores indicate that a similar mangrove environment prevailed during Chantuto times. Unfortunately, no identifiable pollen was recovered from the site, nor was phytolith data pertinent to economic behavior (Micheals and Voorhies 1999: 48). Analysis from Vuelta Limon indicate that forest elements dominated the phytolith assemblage but indicators of disturbance such as grasses are also present and Voorhies (1996a: 24) states that this phytolith study documents “...evidence of probable cultigens: maize, maize crosses and squash.”

There was a hiatus between the end of the Chantuto B phase (ending at 1800 BCE) and the first Barra phase ceramics (beginning at 1600 BCE). Villages and pottery use are first documented during the Barra phase and structures have been documented from at least two sites (Clark 1994: 313). During the following Locona phase, evidence of political complexity is present: a two-tiered settlement system had

emerged (Clark and Blake 1994); large, high-status residences have been documented at sites such as Paso de la Amada in the Mazatán zone of the Soconusco (Blake 1991; Clark 1994). Recent settlement and excavation data from Cuauhtémoc in the southeast end of the Soconusco (see Figure 1) help document that this was a regional phenomena (Rosenswig 2004a, 2005).

Barra phase ceramics are very finely made and all are decorated or slipped and appear to imitate the shape of gourds: 85% are tecomates and 15% are deep bowls (Blake et al. 1995: 167). Clark and Blake (1994) suggest this is due to the initial role of ceramics as prestige goods used as drinking containers at competitive feasts (see also Smalley and Blake 2003). Barra phase vessel's surface decoration is similar to what would be expected on the surface of gourds. This is in contrast to Locona and later period ceramics that have a broader range of forms and include the use of shell edges and rocker stamps impressed into wet clay in a manner not possible on a gourd surface. These developments in ceramic technology suggest that the range of functions and decoration techniques expanded as the new medium were incorporated into society.

Manos were present in the Mazatán region during the Barra phase in such low numbers that Lowe (1975) inferred, along with a lack of corn, that manioc must have been the staple crop. Minimal wear on these tools suggests that grinding was not a significant practice at this time. However, from Locona times ground stone implements increase in importance and Clark (1994: 246) has documented an inverse and gradually changing relationship between the quantity of fire cracked rock (decreasing) and the number of manos discarded (increasing) during the Early Formative period. I have been able to replicate this pattern at Cuauhtémoc (Rosenswig 2005: 166-170). This pattern suggests a gradual transition in subsistence practices as grain production gradually increases over the centuries *following* the emergence of ceramic use.

Feddema (1993:77) analyzed macrobotanical samples from four Early Formative sites and found carbonized maize remains in deposits from all Early Formative periods. AMS dating of eight of these seeds confirms their age (Clark 1994: 234). In addition, the length of cob fragments more than doubled between the Ocós and Cuadros times (Feddema 1993: 62). However, this is based on only four cobs that were complete enough to measure. The largest of these maize remains were still 40% the size of modern maize (Blake et al. 1992: 89). Maize was the most commonly recovered plant remain from Locona through Jocotal deposits but beans and avocados were also recovered from Early Formative contexts at most sites in the region (Feddema 1993: 79).

Despite the presence of corn remains, isotopic analysis from the Early Formative burials from eight different sites in the Mazatán region indicate that these individuals consumed a very limited quantity of C4 plants (Blake et al. 1992: 89). These results have been questioned due to small collagen fractions (Ambrose and Norr 1992) but reanalysis of problem samples produced the same results and even if these samples are discarded, the rest of the Early Formative burials have low C4 values (Chisholm et al. 1993). It was only from Middle Formative skeleton samples that C4 levels become significant and thus indicate maize dependence (Blake et al. 1992: 89). These isotope results are supported by new data from Cuauhtémoc where a significant increase in the overall proportion of ground stone as well as an increase in the proportion of manos and metates versus mortars and

pestles that were documented during the Conchas phases (Rosenswig 2005).

Northern Belize Late Archaic and Formative

The best defined Late Archaic sequence in the Maya Lowlands comes from work carried out at the site of Colha and nearby Cobweb swamp (Hester, 1994; Hester et al. 1996; Iceland and Hester 1996). This period is divided into the Early Preceramic (2500-1900 BCE) and the Late Preceramic (1500-900 BCE) based on the available C14 dates (Hester et al. 1996; Iceland 1997).

Colha is located at the north end of an extremely high quality chert bearing zone that was extensively utilized from Archaic times up until Spanish contact. Numerous highly patinated flakes, large blades, projectile points, sandstone bowls and constricted unifaces have been identified in a handful of sites in northern Belize. The Lowe Points has been tentatively dated to 2500-1900 BCE based on associated radiocarbon dates (Kelly 1993: 215) and is the primary archaeological characteristic of the Early Preceramic period. Constricted unifaces are associated with the Late Preceramic and have been identified as woodworking adzes (Gibson 1991) but could have also been used as a digging tool, as suggested by experimental and microwear studies (Hudler and Lohse in Iceland and Hester 1996: 13). Both activities are consistent with a horticultural adaptation. The Early Preceramic of Northern Belize is coeval with the Chantuto B phase in the Soconusco and the Late Preceramic with the Early Formative period (see Table 1)

After inadvertently encountering Preceramic components below Postclassic villages in the Freshwater Creek drainage (Rosenswig 2004b; Rosenswig and Masson 2001) we targeted these deposits at Progresso Lagoon in 2001. At the site of Caye Coco, approximately 150 m^2 of distinctive orange soils (see Figure 3) containing patinated lithics from Late Archaic were encountered and two pit features as well as a single posthole were documented (Rosenswig 2002, 2004). These are the only Archaic features documented to date in northern Belize. In addition to patinated chipped stone tools and flakes, two hammer stones were recovered and evidence of worked oyster shell was also found. Excavations were also initiated that year at the Fred Smith Site on the west shore of Progresso Lagoon facing Caye Coco and many more heavily patinated tools were documented in orange soils. During the 2001 season, three other preceramic sites were documented on the west shore of Progresso Lagoon (see Rosenswig and Masson 2001).

Figure 3. Orange soil horizon documented at Caye Coco in Northern Belize

The consistent association of orange soil and heavily patinated lithics in the Progresso Lagoon area make site identification much simpler. It is interesting that Lowe Points from the Ladyville 1 site were also found in a “10-15cm thick mottled orange-sand stratum” (Kelly 1993: 215). The Belize Archaic Archaeological Reconnaissance project documented a

number of sites in the area (MacNeish 1981, 1982). In 1981 and 1982, a total of 46 m^2 were excavated on the west shore of Progresso Lagoon at the Betz Landing site (Zeitlin 1984). No features are reported from these excavations but a "reddish-brown soil…" 20-40 cm below the surface produced dates of 1230 +/- 85 BCE and 1275 +/- 85 BCE (Zeitlin 1984: 364). Below this layer, they documented a dark gray, aceramic clayey soil containing lithic artifacts assigned to the Late Archaic Melinda complex (Zeitlin 1984: 364). A date of 1790 +/- 800 BCE was derived from this lower level (Zeitlin 1984: 365).

On the margins of Cob Swamp, raised fields may have been constructed as early as 800 BCE to exploit the fertile swamp soil for agriculture (Jacob 1995). This corresponds to the early Middle Formative period which is the first to have ceramics in northern Belize (Hammond 1991). Pollen and radiocarbon samples were analyzed from a column sample that documented two buried fields in these raised swamp areas (Jones 1994). The lower zone contained pollen remains which indicate reduced forest coverage and increased numbers of disturbance taxa as well as a single manioc grain and date to 2500-1000 BCE. The upper ceramic bearing zone contained maize, cotton and possibly chili pollen and is dated to 1000-500 BCE (Jones 1994)

Mary Pohl and her colleagues undertook a paleoecological program of coring and excavations at a number of swamps in northern Belize and have conducted over 40 radiocarbon dates (Pohl et al. 1996). They documented maize and manioc at Cob Swamp by 3000 BCE. Yet tree pollen indicates that these cultigens were employed in high tropical forest with minor disturbance (Pohl et al.1996:363). However, John Jones' (1994) pollen analysis indicates that it was only after 1500 BCE that forest disturbance was extensive with significant increases in maize and charcoal remains.

From the earliest levels with evidence of architectural construction at Cuello, maize constituted over 80% of the macrobotanical remains recovered (Miksicek 1991: 80). Over 1100 maize cupules and kernel fragments were documented as well as carbonized fruit seeds and wood from avocado trees. Isotope analysis from Cuello indicate high levels of C4 plants were consumed and thus a reliance on maize. In addition, tuber crops were recovered including samples of manioc AMS dated to between 800 and 475 BCE (Hather and Hammond 1994).

At Cob Swamp, Middle Formative ceramics have been recovered with a date of 890 BCE. A female burial was also found with carbon isotope values that indicate maize was not a major part of her diet (Pohl et al.1996 366) – in contrast to Cuello (van der Merwe 1994 in Pohl et al.1996: 366). Faunal remains from Middle Formative contexts in Cob Swamp are consistent with such results and include terrestrial and freshwater mammals as well as birds, marine reef fish and shellfish species, the latter brought in from the coast. Therefore, as with the situation in the Soconusco, there is macrobotanical evidence of domestic plants which is earlier than the isotope results from human bone which indicates that maize was used as a staple food source. In both areas increased horticulture is documented by 1600 or 1500 BCE whereas agriculture is not documented until after 900 BCE.

There are a broad range of lithic tools present at the Late Archaic sites discussed above, including a range of unifaces, bifaces and utilized flakes, with which people did more than just cut down trees (Iceland 1997). This is not surprising as a viable adaptation should be expected to

possess lithic tool types representing a range of economic activities. Although not previously documented from preceramic contexts, oval bifaces (such as heavily patinated Late Archaic examples documented at Progesso Lagoon [Rosenswig 2002]) are similar to Formative examples documented from nearby Pultrouser swamp (see McAnany 1992: Fig 8-5, 8-6). In fact, the oval biface is the most ubiquitous tool found from the Middle Formative through Terminal Classic periods (McAnany 1992: 202). Also the use of macroblades to produce formal tools using similar trimming techniques is a another continuity between the Late Archaic and Middle Formative lithic assemblages, reported from Colha (Potter 1991: 25-26; Iceland 1997: 276).

Summary

Changes in lowland Mesoamerican human-environment relationship can be summarized as follows (see Table 1):1) Humans appear to have been engaged in small scale clearing of forests as early as 7000 BCE (Piperno 1989; Piperno and Pearsall 1998: 78); 2) After 1900/1800 BCE a hiatus begins in both the Soconusco and Northern Belize sequences; 3) By 1600/1500 BCE, the hiatus ends and a new adaptation is evident in both regions– ceramic use in the Soconusco and constricted unifaces in northern Belize with evidence of maize and other domestic plants in both regions; 4) A true agricultural adaptation evidenced by isotopic signature of high maize consumption is not documented in either region until the Middle Formative period beginning approximately 900 BCE.

Old World Collapse and a Global 4200 BP Environmental Event

In southern Mesopotamia, the Akkadian Empire collapsed at approximately 4200 BP. Based on archaeological evidence from Tell Leilan in Syria, Weiss et al. (1993: 996) argue that “imperial collapse, regional abandonment and large-scale population dislocation” corresponds to paleo-environmental data indicating a sustained, centuries-long drought. A 300 year abandonment of Tell Leilan from 4200-3900 BP corresponds to at least ten other excavated sites abandoned across the Habur and Assyrian Plains (Weiss et al. 1993: 999) and a dramatic decrease in the hectares of site occupation from this time (Weiss, et al. 1993: 1002). Tell Leilan was a northern outpost of the Akkadian Empire and during the time of this abandonment the core of the empire in Southern Mesopotamia was attacked by mobile Hurrian, Gutian and Amorite populations. During the Ur III dynasty a wall was constructed to repel the Amorites and the Curse of Akkad (written at approximately 3900 BP) tells of the barbaric Gutians who came from the mountains and laid waste to the Akkadians.

The Akkadian collapse occurred at the same time as the paleo-environmental record indicates a period of significantly cooler and dryer conditions in the area (Weiss and Bradley 2001). This record is documented in the Near East from cores in Lake Van and the Gulf of Oman (Cullen et al. 2000) as well as from speleothem analysis in Israel’s Soreq Cave (Bar-Mathews et al. 1997). The 4200 BP climatic event and the collapse of the Akkadians occurred at the same time as the collapse of the Old Kingdom in Egypt, the Harrapan C3 civilization in the Indus Valley and the Early Bronze Age III period in the eastern Mediterranean (see Weiss et al 1993: note 69; Weiss and Bradley 2001: 610). The 4200 BP Event and its aftermath caused as much as a 30% reduction in precipitation in the region due to a disruption in the Mediterranean westerlies and monsoon

rainfall (Weiss and Bradley 2001: notes 9-11).

Recent paleo-environmental work from China (An et al. 2005), South America, East Africa (Thompson et al. 2002) and North America (Booth et al. 2005) all indicate that the 4200 BP Event was a world wide occurrence of dryer and cooler conditions in lower latitudes that lasted two or three centuries. The paleo-environmental record from Mesoamerica is ambiguous for this time because little work has been focused on the period before the adoption of ceramics and village life.

Mesoamerica and the 4200 BP Event

Almost all discussion of drought in Mesoamerica has focused on the Classic Period Maya collapse (e.g., Gill 2000; Fowler 2002; Fowler and Morgan 2002). A recent synthesis of world-wide collapse published in *Science* by deMenocal (2001) discusses the Akkadian and Maya collapses one after the other despite their separation by 5000 years. More relevant would have been what was occurring culturally in Mesoamerica at 4200 BP.

It is worthwhile noting that researchers have defined a hiatus in the Soconusco between Chantuto B and the Barra phase from 1800-1600 BCE (uncalibrated) and in Northern Belize between the Early Preceramic and Late Preceramic from 1900-1500 BCE (uncalibrated). When calibrated, 1800 BCE corresponds to 4200 BP. Therefore, after the 3-century long 4200 BP Event ended, the inhabitants of both the Soconusco and Northern Belize experienced a marked change in adaptation with technological innovations that reflect a much greater reliance on plant cultivation. In the Soconusco, ceramics were adopted at this time and the Formative period was initiated with the early Barra phase villages. In northern Belize, constricted unifaces began to be used and the pollen record indicates that the forests were being cleared and maize planted at an unprecedented level.

Arnold (1999) has recently noted that the earliest Formative period villages in the Isthmian Area resemble mobile Archaic adapted people except for the presence of ceramics. Clark (1994; Clark and Gosser 1995) also observes that the initial Formative technology is similar to that of their Archaic predecessors. This suggests that except for the increased archaeological visibility of Formative villages (coupled with our bias as to what ceramic use indicates) there may be less difference between the archaeological records of the Soconusco and northern Belize than is first apparent. Perhaps both regions were experiencing a similar “push” to agriculture (Richerson et al. 2001) at approximately the same time as environmental conditions improved for plant production after 3900 BP.

The 4200 B.P. drought may further help explain an odd aspect of settlement patterns in the Freshwater Creek drainage of Northern Belize. Over a number of excavation seasons, Marilyn Masson and I had documented Postclassic (some with Terminal Classic) occupations over Late Archaic deposits on the two island communities of Laguna de On and Caye Coco with no Formative or Classic period occupation in between (Rosenswig 2001, 2002, 2004b; Rosenswig and Masson 2001). If sustained drought was responsible for the end of the previous adaptation (i.e., earlier Archaic and Late Classic) then this goes a long way to explain why agriculturally adapted populations were focused on what remaining water there was in the area. Then, once precipitation increased, island and lacustrine settlement could have expanded out to newly hospitable locations.

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5 THE LATE PRECLASSIC TO EARLY CLASSIC TRANSITION IN THE THREE RIVERS REGION

Lauren A. Sullivan and Fred Valdez, Jr.

Excavations of the Programme for Belize Archaeological Project in the Three Rivers Region have provided a wealth of data from a number of sites ranging in size and position in the regional hierarchy to better examine the transitional period from the Late Preclassic to the Early Classic. This paper will focus on trends in ceramic characteristics that continue from the Preclassic into the Early Classic potentially complicating and/or obscuring the identification of Early Classic occupation. The most pronounced of which is use of a waxy Sierra Red-style slip into the Early Classic. Also discussed will be location of Early Classic settlements outside of large site centers and into other areas and what this means for the Early Classic elite of the Three Rivers Region.

Introduction

The Early Classic has traditionally been considered one of the more difficult time periods to recognize and define in the Maya area (Chase and Chase 2005; Lincoln 1985; Smith 1955). Examining the transition between the Late Preclassic and the Early Classic in the Three Rivers Region has been particularly challenging. Data recovered from the regional project originally suggested that there was a population decline in this area during the Early Classic compared to the Late Preclassic; however, through the years a more complete picture has emerged suggesting that the population decline was not as extreme as originally hypothesized. Issues contributing to the detection of Early Classic settlement that will be discussed here are: what appears to be the movement of people into areas outside of large centers (Chase and Chase 2004; Fry 1990; Pyburn 1998; Sullivan and Valdez 2004) and the continued use of Late Preclassic ceramic types in the Early Classic. (Sullivan and Valdez 1996; Sullivan and Valdez n.d.).

The Three Rivers Region

The Three Rivers Region (Figure 1) is a geographically defined region of ca. 2,000 square kilometers which is bounded by the Rio Azul and its associated flood plains on the northern and western margins, the Booth's River on the eastern edge, and the site of Chan Chich which arbitrarily sets on the southern border (Adams 1995). The data discussed here were collected from the part of the Three Rivers Region that is located in northwestern Belize on the Rio Bravo Conservation and Management Area (Figure 2). The ceramic data from the regional project includes collections from a number of sites ranging in size and position in the regional hierarchy. Ceramics were also collected from various settlement surveys conducted between Dos Hombres and La Milpa. These data reveal occupation in the region spanning from the Middle Preclassic to the Late Classic with little indication of Postclassic occupation for the area (Sullivan 2002; Sullivan and Valdez 2004).

Tikal and Rio Azul

The transition from the Late Preclassic to Early Classic represents a time of political change for the Maya with many dominant Late Preclassic sites declining in power while other sites begin to thrive. These political changes are seen in the Three Rivers Region when Tikal emerged as one

of the most powerful Early Classic sites in the Petén under the rule of Chak Tok Ich'aak

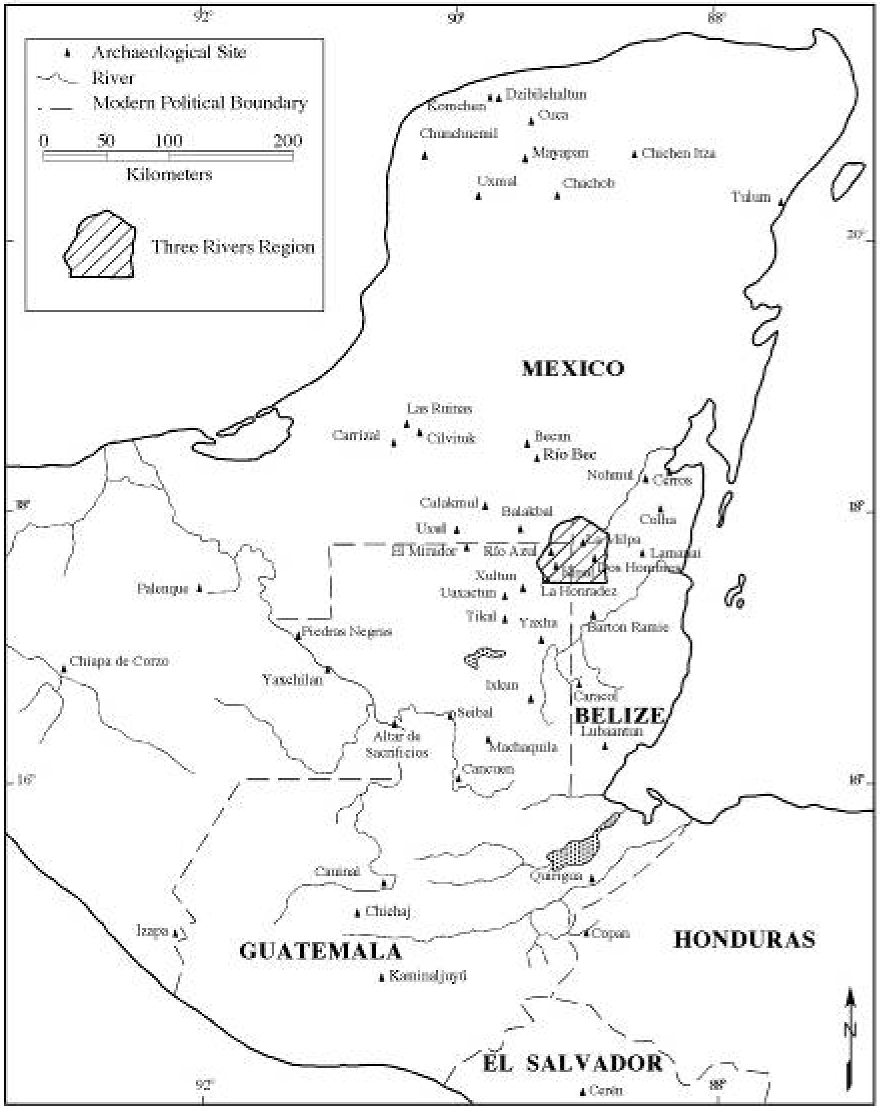

Figure 1: Location of the Three Rivers Region (map by Brett Houk)

(Great Jaguar Paw). The most significant documented interactions between Tikal and the Three Rivers Region occurred at Rio Azul. There is considerable Late Preclassic construction at Rio Azul and construction continued into the Early Classic featuring temples with modeled stucco motifs and glyphic texts (Adams 1999). What is interesting is that the site's primary temple complex is relocated during the Early Classic. A large Late Preclassic structure (G-103) was intentionally buried at the same time that Tikal is believed to have conquered the site (ca. AD 392) (Adams 1999). G-103 was defaced and then ritually buried with alternating layers of soil and marl. A cache consisting of two lip-to-lip Sierra Red bowls with part of a human skull, the mandible of an adult dog, the bones of several puppies, a spondylus shell, and one-half of a jade bead was located under the plaster floor at the base of the central staircase (Valdez 2000, 2003; cf. Chase and Chase 1998). After this act, the structure

along with the area around it was abandoned for the rest of Rio Azul's history and the new civic center at the site was re-located approximately 500 meters to the north (Adams 1999; Sullivan et al. n.d.).

Tikal's presence at Rio Azul is noted at the time that G103 was buried. Two new temples were built in another location (the A-group) and three altars depicting the execution of eight elites were found (Figure 3). Stela 1, erected in A.D. 392, also indicates violent change at the site. This

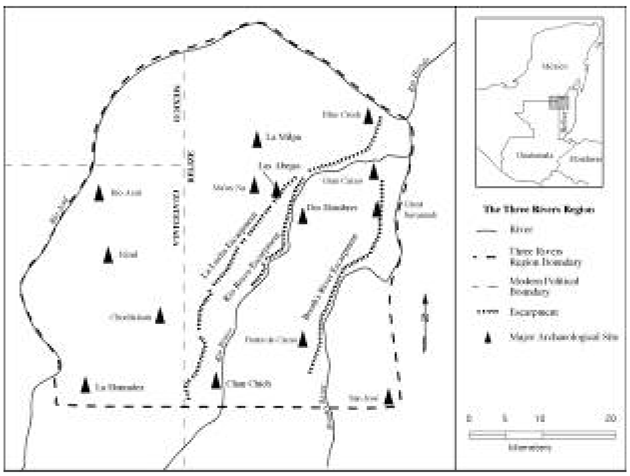

Figure 2: The Three Rivers Region (map by Brett Houk)

stela depicts a standing human figure with an unknown captive at his feet. The text is thought to name a ruler of Río Azul (Zak Balam) and the contemporary ruler at Uaxactún, Siyak K'ahk (Smoking Frog). Another stela (Stela 3), although badly damaged, shows a standing human figure with a captive at its feet. The series of rulers that succeeded Zak Balam are all thought to have been subordinate to Tikal. These data all point towards violent change with the incumbent rulers of the site depicted as Tikal's subjugated captives (Adams 1999; Sullivan et al. n.d.) La Milpa, which has significant growth during the Early Classic, is also tied to the Tikal regional state, perhaps as a subordinate to Rio Azul (Sagebiel 2005).

Dos Hombres, Barba Group and La Milpa

Interestingly, despite all of the activity associated with the nearby site of Tikal, of the 14 known major sites falling within the boundaries of the Three Rivers Region (Houk 2003), there is evidence for Early Classic monumental construction at only four: Rio Azul (Adams 1999), La Milpa (Hammond et al. 1996), La Honradez (Von Euw and Graham 1984), and Blue Creek (Guderjan 1995). This pattern is in contrast to other areas in northern Belize where the transition between the Late Preclassic and Early Classic is marked by the ceremonial or ritual placement of ancestral remains atop domestic structures followed by the construction of pyramidal structures – a trend observed at Altun Ha, Colha, Cuello, and K'axob (McAnany, Story, and Lockard 1999). What we have observed in the Three Rivers Region is the location of elite populations in areas where we do not necessarily see extensive Early Classic architecture.

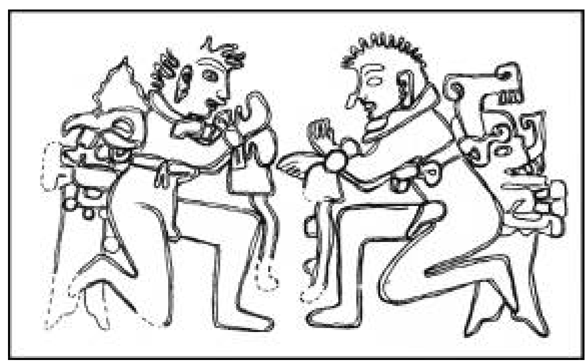

Figure 3: Elite execution on Temple Complex A-3 at Rio Azul (Adams 1999: Figure 3-33)

A tomb located at Dos Hombres in a small raised platform group separate from the primary ceremonial precinct suggests a definite Early Classic (Tzakol 1-2) presence in the region (Durst 1998). Due to the small

size and the location of this group away from the main site center the discovery of the tomb was somewhat of a surprise (Durst 1998). Associated with this tomb were nine complete vessels, 11 Spondylus shells, two greenstone ear spools, hematite mirror fragments, and over 20,000 pieces of obsidian found just above the tomb entrance (Durst 1998). Vessels from this tomb include: a Dos Arroyos Orange-polychrome basal flange bowl (Figure 4) covered by a Yaloche Cream-polychrome scutate lid with a macaw head handle. The Dos Arroyos bowl is very similar to a vessel recovered from Burial 1 at Uaxactún as noted in the images on the vessel interiors and exteriors. Similar figures have also been noted at Chan Chich, San Jose, and Tikal. The macaw head handle from the lid is also similar to a handle from Uaxactún (Smith 1955). A coatimundi effigy vessel with a red and black mottled slip was among the vessels recovered. This type of specialized effigy vessel was not recovered from any other context at the site. Other ceramics recovered from this tomb include three miniature vessels: two black monochrome spouted vessels and one orange monochrome spouted vessel (Sullivan 2002; Sullivan and Sagebiel 2003; Sullivan and Valdez 2004).

Another tomb located on the edge of the Rio Bravo Escarpment, about 2.5 km northwest of the site of Dos Hombres (the Barba Group) (Hageman 2004) yielded a number of vessels tentatively dated to Tzakol 3 and including (Figure 5): a Teotihuacán-style tripod cylinder and matching lid with a handle in the shape of a human head (similar to a lid recovered from Burial A 22 at Uaxactun (Smith 1955) and one from Tomb 25 at Rio Azul (Hall 1984), three uniquely shaped effigy vessels - a shell with a human head, a zoomorphic orange polychrome jaguar vessel, and an orange polychrome in the shape of a bird that resembles an ocellated turkey. Analysis of these vessels have demonstrated interregional ideological connections between the elite of sites including La Milpa, Dos Hombres, Rio Azul, Uaxactún, Tikal, Nohmul, and Teotihuacán (Sullivan 2002; Sullivan and Sagebiel 2003; Sullivan and Valdez 2004).

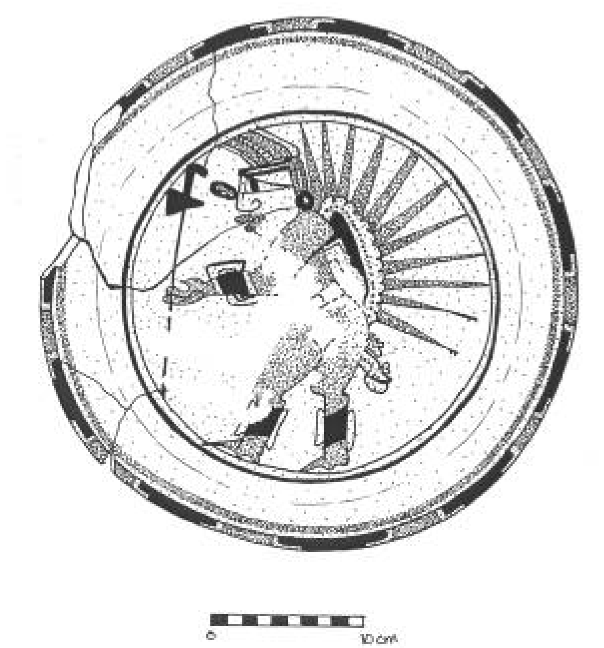

Figure 4: Dos Arroyos Orange-polychrome interior (Sullivan 2002)

An Early Classic tomb was also recovered from the site center of La Milpa; however, the tomb was not associated with any major Early Classic construction. Kerry Sagebiel (Sagebiel 2005; Sullivan and Sagebiel 2003) has discussed the ceramics from this tomb and their ties to other vessels in the Tikal regional state.

The paste and temper of these vessels are consistent with local clay sources and suggest many of these tomb vessels may have been locally made; however, the use of specific ceremonial symbols and other stylistic similarities does indicate important connections between the Three Rivers Region and sites outside of the region. The

appearance of these types of luxury vessels coincides with the rise of Tikal's fortunes and may have served as a way for the more rural elite to associate themselves with the powerful rulers of the core area (Sullivan 2002, Sullivan and Sagebiel 2003).

Ceramic Transition from the Late Preclassic to the Early Classic

Another problem with investigating the transition to the Early Classic is the continued use of Late Preclassic ceramic styles in elite and non-elite contexts- potentially obscuring Early Classic occupation. Early Classic ceramic traditions were first identified by Vaillant at Holmul and were primarily represented by objects from elite contexts such as tombs (Lincoln 1985; Merwin and Vaillant 1932). The characteristics described at Holmul were later expanded with data from Uaxactún where Smith (1955) divided the Early Classic period into three sub phases spanning from AD 300 to 600. Tzakol 1 is characterized by Z-angles bowls, Tzakol 2 the appearance of basal flange as well as the proliferation of polychromes, and tripod bowls, and Tzakol 3 by the appearance of Teotihuacán Thin Orange, tripod vases, and decorative techniques that include plano-relief carving and stuccoed-and painted decoration (Lincoln 1985; Smith 1955).

These divisions and their associated dates have been criticized on several counts (Adams 1971, 1989; Graham 1994; Lincoln 1985). First, it has been postulated that Early Classic ceramic styles were spread by elite trade networks and the use of ceramic traits associated with elite deposits may prevent recognizing this time period in other contexts (Willey 1985). Second, these divisions tend to ignore the possibility of ceramic types and styles persisting through time and not allowing for much flexibility (Adams 1971; Brady et al. 1998; Forsyth 1989; Neff 1993).

Further complicating the issue is a disagreement over the definition of and the identification of Protoclassic ceramic markers as well as the irregular distribution of Protoclassic materials (Brady et al. 1998). In fact, Culbert (2002:360) notes, "the term has so much past baggage that its use does nothing more than compound the confusion". Brady et al. (1998) and Pring (2000) have that argued, the Protoclassic ceramic stage overlapped with the Late Preclassic and Early Classic periods, but was not a "period" in its own right (ca. B.C. 75-A.D. 400). Ceramic traits typically associated with the Protoclassic include Usulutan and/or pseudo-Usulutan vessels, mammiform tetrapods, various orange wares, and polychrome decoration.

Figure 5: Barba Group Tomb vessels (PfBAP)

Ceramic Transitions in the Three Rivers Region

In terms of identifying this ceramic stage across the Three Rivers Region, Protoclassic ceramic types are extremely rare in standard contexts (construction fill, middens, caches, etc.) and are instead associated with elite mortuary deposits. The two significant examples of Protoclassic in the region are Tomb 2 from Chan Chich and Tomb 5 from Blue Creek. Both of these deposits contained ceramic types

characteristic of the Late Preclassic or Early Classic periods as well as types traditionally described as "Protoclassic". Tomb 2 (Chan Chich) contained 11 vessels that included one Sierra Red basal angle bowl, four red slipped mammiform support bowls, and one red-and-incised basal flange bowl (Figure 6) (Houk and Robichaux 2003; Valdez and Houk 1998). Tomb 5 (Blue Creek) included 28 vessels similar in form to the Cauac (0 B.C.–A.D. 150) and Cimi (A.D.150-250) complexes at Tikal. Among the types represented in the tomb are standard Late and Terminal Preclassic types such as Sierra Red, Laguna Verde Incised, Society Hall Red, and Flor Cream. While no "true" Usulutan types are represented, trickle-style imitations are present (Kosakowsky and Lohse 2003).

The two tombs share something else in common: neither was found where such deposits would be anticipated. Tomb 2 was found beneath a plaza floor, and Tomb 5, was found at a small settlement off the escarpment. Houk and Robichaux (2003) have suggested that these specialized funerary assemblages were shared by a small percentage of the population at the end of the Late Preclassic and associated with early concepts of kingship and the divine right to rule. This right may have been reflected in their ability to acquire exotic Protoclassic ceramics– a trend that continues into the Early Classic (Houk and Robichaux 2003).

As mentioned above the continued use of Late Preclassic and Terminal Late Preclassic ceramic styles in the Early Classic is observed. One of the most pronounced traditions is the use of the waxy Sierra Red style slip into the Early Classic. Sierra Red is viewed as the diagnostic pottery type of the Chicanel period in this region (Kosakowsky and Sagebiel 1999; Sagebiel 2005; Sullivan 2002; Sullivan and Sagebiel 2003). In fact, 68% of the ceramics recovered from Late Preclassic contexts have been identified as Sierra Red (Sullivan and Valdez n.d.). Generally speaking, the monochrome red tradition is replaced by a monochrome orange tradition leading to Aguila Orange during the Early Classic (Adams 1971).

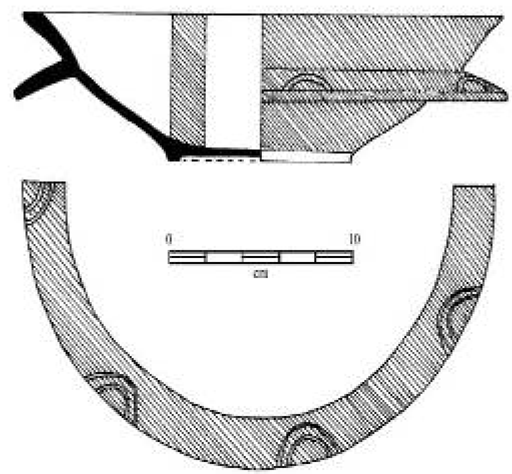

Figure 6: Laguna Seca Incised (Valdez and Houk 1998)

In the Three Rivers Region Sierra Red sherds are found in association with Early Classic types such as Aguila Orange and Dos Arroyos Orange Polychrome in a number of contexts; and, basal flanges and ridges with a slip very similar to Sierra Red are consistently recovered. This issue has been revisited various times over the years, and was mentioned by Thompson as early as 1939 when he discusses a "carry-over of forms" between San Jose I and II (Thompson 1939). At Uaxactun, Smith proposed a "Chicanel-Tzakol Transitional Phase" called the Matzanel phase (Smith 1955) and called for a more detailed analysis to determine how this change might be manifested during this transitional period. Adams (1971) also observed traits that carried over from the Late Preclassic to the Early Classic at Altar de Sacrificios as did Ball at Becan (Ball 1977). Last but not least

the same continuity is observed in northern Belize at sites such as Colha, Cuello, and K'axob (Hammond et al. 1991; Kosakowsky 1987; Kosakowsky and Pring 1998; McAnany and Lopez Varela 1999; Meskill 1992; Valdez 1987) and in the Belize Valley at Caracol (Chase and Chase 2005) as well as Barton Ramie, Cahal Pech, and Buenavista del Cayo (Awe and Helmke 2005; Brady et al. 1998).

This continued use of a waxy red slip on traditional Early Classic forms led to the definition in the field of a new type Rio Bravo Red (named by Sullivan, Sagebiel, and Kosakowsky) (Sullivan 1998; Sullivan and Valdez 1996; n.d.). Forms associated with Rio Bravo Red include bowls with a basal flange and/or basal ridge (Figure 7), outflared or slightly rounded sides, and a direct rim and, are found in association with other Early Classic types. The paste for Rio Bravo Red sherds is consistent with local clays and ranges from tan to orange with visible calcite inclusions and is most often oxidized throughout. In cases where form (e.g., a basal flange) is not clearly identifiable, distinguishing between Sierra Red and Rio Bravo Red can be problematic.

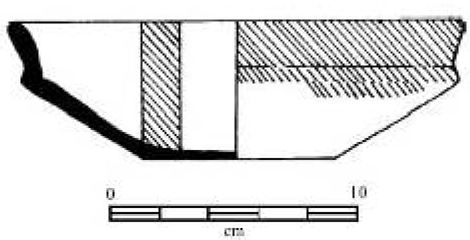

Figure 7: Rio Bravo Red (Valdez and Houk 1998)

To further examine the transition between these time periods, three ceramic types (Sierra Red, Rio Bravo Red, and Aguila Orange) were analyzed petrographically in a pilot study in order to determine whether or not there are also microscopic differences between types and their associated time periods. As early as 1955 Smith and Sheperd noted a change from grog tempered sherds in the Late Preclassic to calcite and tuff tempered sherds in the Early Classic and called for a more detailed analysis to determine how this change might be manifested during this transitional period (Smith 1955).

Overall three major fabric groups could be easily recognized based on the types of inclusions, their size and sorting. Group 1 consists primarily of poorly sorted inclusions of angular, rounded, and sparry calcite, limestone, and chert. Eighty-two percent (n=9) of this group dates to the Early Classic (Aguila Orange and Rio Bravo Red) while the remaining 18 percent (n=2) are associated with the Late Preclassic (Sierra Red). Group 2 consists of well-sorted and fine grained clay with more uniform inclusions of dolomite, quartz, fine sandstone, clay, limestone, and marl. Eighty nine percent (n=16) of the sherds in Group 2 date to the Early Classic with the remaining 11 percent (n=2) associated with the Late Preclassic. The vessels from Group 1 appear to be poorly made with very little processing before firing. The samples from Group 2 are consistent with better-made vessels that most likely underwent more intense processing prior to firing; differing from those in Group 1 primarily in the way they were made and not their composition. At this time, however, we cannot be certain whether the variation between the two groups represent differences in vessel function, access to certain resources, or cultural differences. In addition, while the distinctions between these groups were readily apparent under the microscope–and perhaps to the producer–they are not readily apparent macroscopically and may not have been apparent to the consumer. The final major fabric type, Group 3, is characterized

by sherds with a high quartz content and grog temper. Group 3 (n= 7) occurs entirely within the Late Preclassic. The results of this study also indicate a change in clay source between time periods (Sullivan and Valdez n.d.).

Conclusions

The transition from the Late Preclassic to the Early Classic is marked by significant changes in site location, architecture, and the development of new seats of political power. The data here, however, suggest that many of these early Preclassic networks continued during the Early Classic. Areas outside of large ceremonial centers with Early Classic elite populations were flourishing in a more dispersed settlement pattern originally interpreted as a drastic population decline. While distinct differences are noted in clay source and temper, it is also evident that the successful expansion and adaptation of certain Preclassic pottery styles continue in use well into the Early Classic. It is this successful adaptation, development and continuous use of certain material culture as well as the changing settlement pattern that obscures the beginning of the Early Classic at many sites.

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6 THE DAWN OF MAYA CIVILIZATION: PRECLASSIC PERIOD ARCHAEOLOGY FROM SANTA RITA COROZAL

Diane Z. Chase and Arlen F. Chase

Although the site of Santa Rita Corozal is best known for its Postclassic Period (A.D. 1100-1532) remains, a substantial number of Preclassic deposits were recovered during the course of archaeological investigation. These materials spanned the entire Preclassic era from ca. 1000 B.C. through the transition into the Early Classic Period at about A.D. 250. This paper presents these data and examines relationships to other Preclassic materials in Belize and elsewhere. These archaeological data have a bearing on the rise of Maya civilization in northern Belize and the posited dating and relationships of Swasey ceramics. They further document the variability that existed in ceramic materials prior to the onset of the Late Preclassic Period.

Introduction

Even prior to the beginning of the 20th century (Gann 1900), the site of Santa Rita Corozal was known for its Postclassic Period remains (A.D. 1100-1532). Subsequent work has amplified our knowledge of Postclassic Maya and the site is identified as the Late Postclassic capital for the province of Chetumal. Besides the Postclassic remains, however, substantial evidence for a lengthy Preclassic occupation also has been recovered during the course of archaeological investigation. These materials span the entire Preclassic era (B.C. 1000 – A.D. 250) and represent some of the earliest remains known from northern Belize. The Corozal Postclassic Project investigations undertaken at Santa Rita Corozal from 1979 through 1985 were not directed towards answering questions concerning the nature of Preclassic occupation and organization at this site. Excavations were often halted before the earliest levels were reached. Full areal exposure of Preclassic constructions was also not attempted, as it would have entailed the removal of overlying architecture. Thus, there was likely a substantially larger Preclassic Period occupation at Santa Rita Corozal than indicated in the current excavation sample. Nevertheless, the temporal and spatial relationships of these early materials have a bearing on considerations of the rise of Maya civilization.

Preclassic remains encountered at Santa Rita Corozal included special deposits, constructions, and use-related debris - as well as stone and ceramic lined pits. As in most periods of Maya prehistory, pottery forms a basic tool in the interpretation of the Preclassic Period archaeological record (Andrews V 1990; Ball and Taschek 2003). As has been noted by Andrews V (1990), however, reconstructions based on pottery may not necessarily mirror other aspects of material culture or be clear reflections of language or ethnicity. This being said, pottery has the obvious advantage of being abundant and variable (Gifford 1976:3). Thus, this paper will highlight the contextual associations of pottery bearing Preclassic Period materials from special deposits at Santa Rita Corozal in order to facilitate consideration of the relationships among materials encountered at other sites in northern Belize and in neighboring lowland areas, building on earlier arguments over the importance of analyzing ceramic subcomplexes (A. Chase and D. Chase 1987). The Santa Rita Corozal data are pertinent to both a consideration of

the early Maya in northern Belize and to the posited dating and relationships of Preclassic Period pottery.

One of the more frustrating aspects of studying Preclassic Period Lowland Maya remains is the dearth of stratigraphically related sealed deposits containing ceramic components. Comparisons are, of necessity, often relegated to stylistic comparisons of surface treatment or modal similarities of pottery among sites. For this reason the focus of this paper is on the illustration of primary Preclassic contexts with whole or reconstructible vessels, particularly those with multiple Preclassic deposits.

Operation P12: Santa Rita Corozal Structure 134

The best-stratified Preclassic Period remains from Santa Rita Corozal were located in Santa Rita Structure 134, an extremely low building situated on the grounds of Corozal Community College at the western edge of Corozal town. Earlier work by Gann (1918:75-78; see also D. Chase 1982:59-60) had found early remains in this portion of the site, so it was not surprising that other early materials were recovered in this vicinity. Structure 134 is the easternmost structure on a small platform. Decision to excavate this area was made because the local high school was in the process of preparing a soccer field that in its original plan would have led to the leveling of this construction. Following excavation, the proposed soccer field was positioned so that it avoided disturbing the structure and its associated platform. Unlike other areas of the site, there was little Late Postclassic Period debris visible on the Structure 134 surface; thus, it appeared at the onset that this locus was likely not late in date. In view of the Postclassic orientation of the Corozal Postclassic Project - and because it seemed likely that excavations would produce non-Postclassic occupation – a trench (rather than areal excavation) was placed across the mound. Operation P12 became a small 15 m long by 1.5 m wide excavation that eventually produced some of the most complex stratigraphy encountered at Santa Rita Corozal. At least 4 separate construction episodes and 22 burials were recovered from this locus (Figure 1). More than half of these burials dated to the Preclassic.

Excavation in Structure 134 was undertaken from May to July of 1980. The trench was completely excavated from its surface to the underlying bedrock, some 2 m below the surface, producing a complex history of use and construction. In this excavation 27 special deposits and features were defined, consisting primarily of burials and hearths. The majority of the recovered deposits and constructions in Structure 134 date to the Preclassic and Early Classic Periods.

The earliest archaeological evidence of activity at the Structure 134 locus consisted of the placement of a burial (SD P12B-25) just above bedrock; this interment was later disturbed by another burial that was placed directly above it (SD P12B-26). This later interment contained a slipped vessel in the upper chest area. The lower portion of this second burial was also partially disturbed by subsequent interment activity; thus the original position of the lower body is not clear. The vessel associated with SD P12B-26 was slipped light red to pink and is of a form similar to Swasey Phase vessels defined at Cuello (Pring 1976); however, the slip color and crude forming of the pot differ from the more refined Cuello examples. These two earliest burials at the Structure 134 locus were covered by a small substructure 2 meters in depth and 30 cm in height. The construction was abutted by a white friable floor lens to its west. The western face of the structure was up to two stone courses in

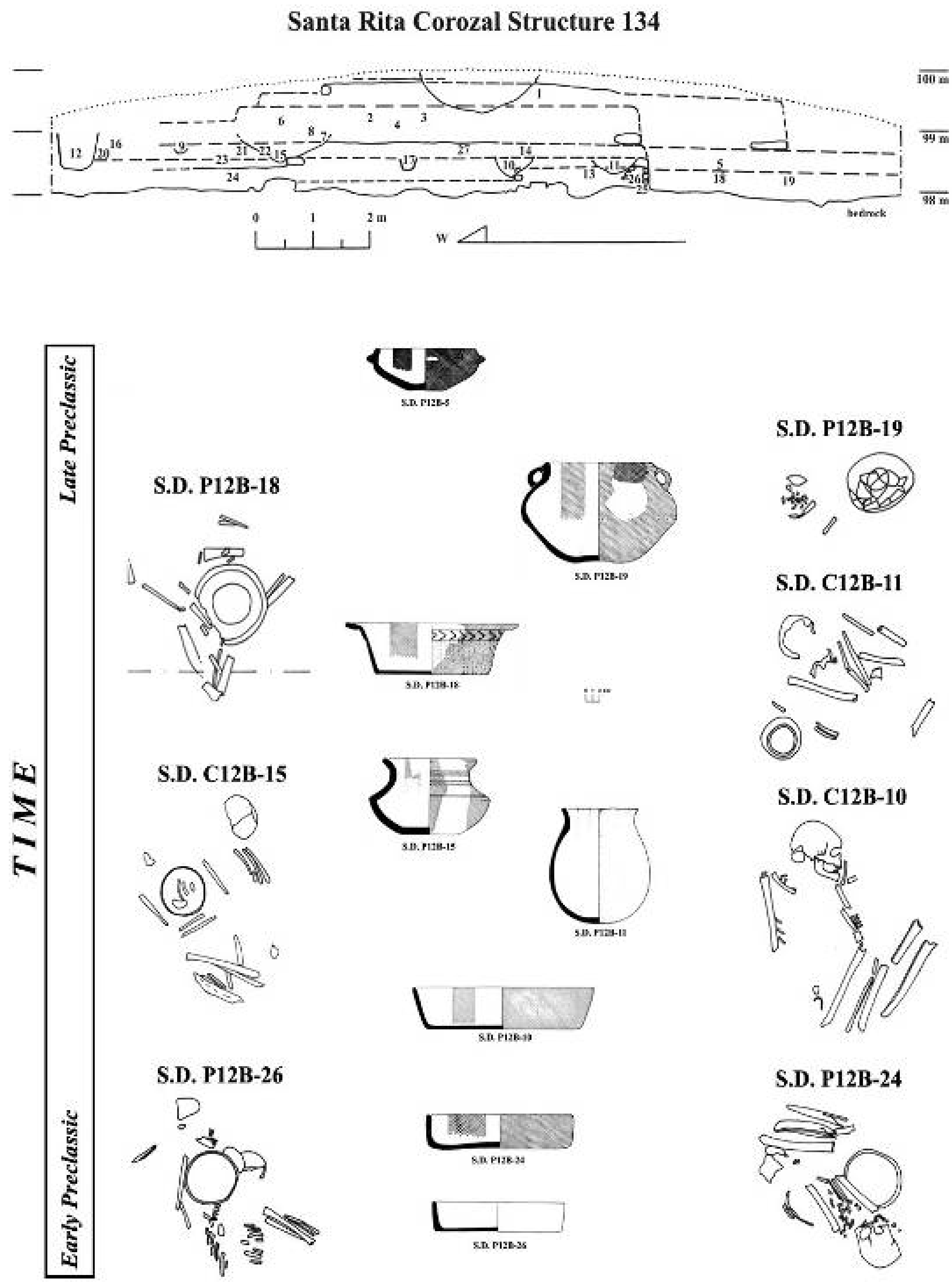

Figure 1. Schematic section through Santa Rita Corozal Structure 134 showing approximate location of recovered special deposits, the plans and vessels associated with the Preclassic burials, and their relative placement in time.

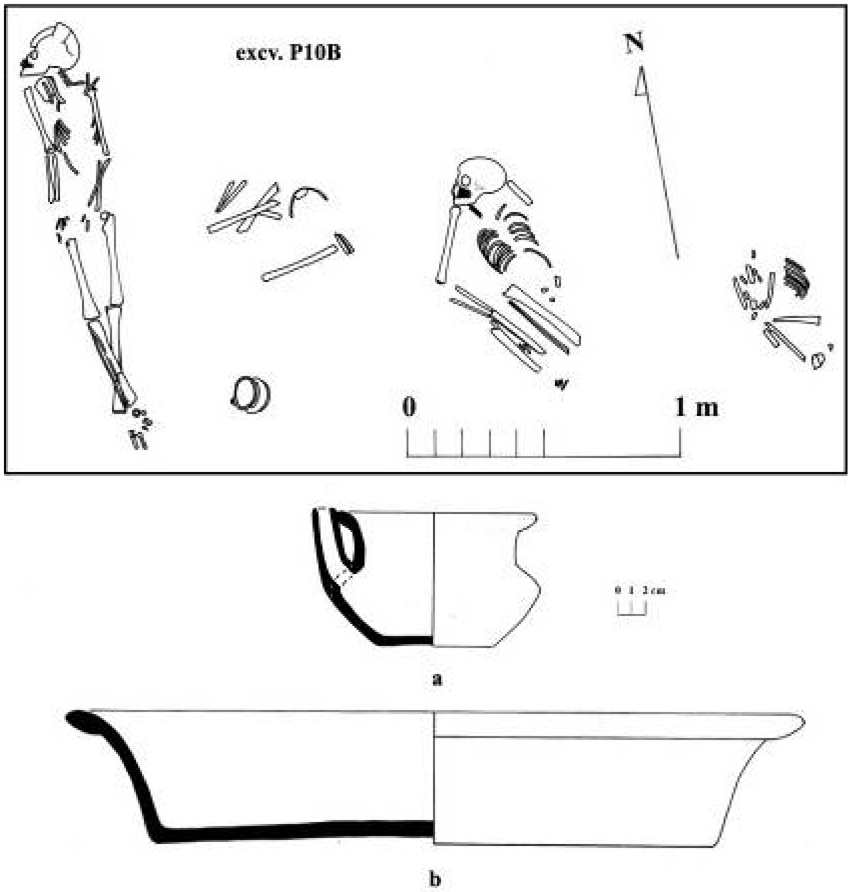

Figure 2. Four interments from the front of the P10B excavation into Santa Rita Corozal Structure 35 and two Sierra Red vessels associated with burials in this structure.

height and was composed of irregular limestone pieces, as was much of the core for the construction. The eastern face was reused in two following construction efforts and, as recovered, were at least 5 stone courses in height.

The second major construction effort in the Structure 134 locus produced a substructure 6 m deep and abutted by a slightly more formalized "plaster" surface to the west; the eastern platform surface must also have been raised at approximately the same time. This second substructure was associated with two presumed hearths, one on its summit (SD P12B-17) and one to its west (SD P12B-23) on the surface of the abutting floor. This western plaster floor sealed SD P12B-24, the burial of a flexed female (see picture in D. Chase 1981). This interment was associated with a single vessel, a shell necklace, and two shell bracelets. The vessel form is well within the range of Swasey forms found at Cuello and the employment of a double slip on the piece is reminiscent of Cuello's Consejo Red. The slip color, however, is a light red to pink, similar to the other early Santa Rita vessels. The formation of this later piece is technically better than the vessel associated with SD P12B-26.

Several other interments were placed within the building core or intruded into this second version of Santa Rita Corozal Structure 134. SD P12B-11 was intruded

through the east wall of the early construction. This burial of a flexed female contained a total of five small-jadeite, shell, and other stone beads, a carnivore canine, and an unslipped olla. The olla is perhaps most similar to Copetilla Unslipped and has the characteristic flattened lip of Cuello's Swasey phase. Two other burials with associated vessels were found intruded into this second early construction. Special Deposit P12B-15 consisted of a flexed female burial intruded through the west facing of the substructure. A single inverted vessel was placed in the chest area; two shell beads were also included within the interment. This vessel is of a form similar to that illustrated for the Swasey Phase at Cuello and for Mamom at Uaxactun. Its slip color ranges from pink to red to black. Another interment (SD P12B-10) was intruded into the area of the west face of the earliest construction. This was the burial of a flexed male. The individual was interred contemporaneously with yet another bowl. This red dish is larger than the flat-bottomed bowls included in the earlier two burials; it potentially approximates Cuello's early Ramgoat Red.

Two burials were located in the matrix east of the earliest Structure 134 construction; these were most likely placed following the second construction effort in the Structure 134 locus. SD P12B-19 was a very poorly preserved burial (only traces of bone remained) associated with an inverted red slipped vessel. This vessel is somewhat problematic as it has a slip characteristic of Abelino Red, but form characteristics possibly suggest a later dating. SD P12B-18 is similarly problematic. This is a disturbed flexed burial with an associated vessel slipped a light red and decorated with a raised band of incised chevrons. While chevrons are noted as appearing in Mamom at Uaxactun (Smith 1955:21), the vessel does not accord well with descriptions of the later Joventud Red. It is also reminiscent of a chevron decorated vessel from K'axob dated to the Late Preclassic (Berry et al 2004: 207), but is of much finer manufacture and is most definitely not Sierra Red.

Subsequent to the placement of these interments, the western plaza floor was further elevated. Extensive use of this new surface is indicted by 3 well-marked hearths (SDS P12B20, 21, and 22). The entire locus was then raised and replastered following the use of this western floor. This construction sealed a series of burials. While most were not overtly associated with ceramic vessels, a flexed burial (SD P12B-5) associated with a burnt Sierra Red bowl was located in the eastern portion of the excavation. This burial was interred either immediately before the construction of this platform flooring or intruded through it not long afterward, thus suggesting a Late Preclassic Period dating. Activity following these burials and constructions appears to be largely dateable to the Early Classic Period.

The Structure 134 excavations provide evidence for a series of construction activities associated with what have generally been termed Swasey sphere ceramics in northern Belize. These constructions are more elaborate than those noted from the site of Cuello. Excavation gives no evidence for abandonment during the sequence of occupation. The burials and associated pottery vessels encountered in this investigation provide a sequence of vessel forms and types. Unfortunately, with the possible exception of the earliest two bowls, these ceramic pieces do not easily fit into any of the recognized early ceramic spheres such as Swasey, Xe, Mamom, or Jenny Creek.

P10B: Santa Rita Corozal Structure 35

Structure 35 was investigated with a 27.4 m by 1.5 m axial trench combined with areal excavation to the front and east sides

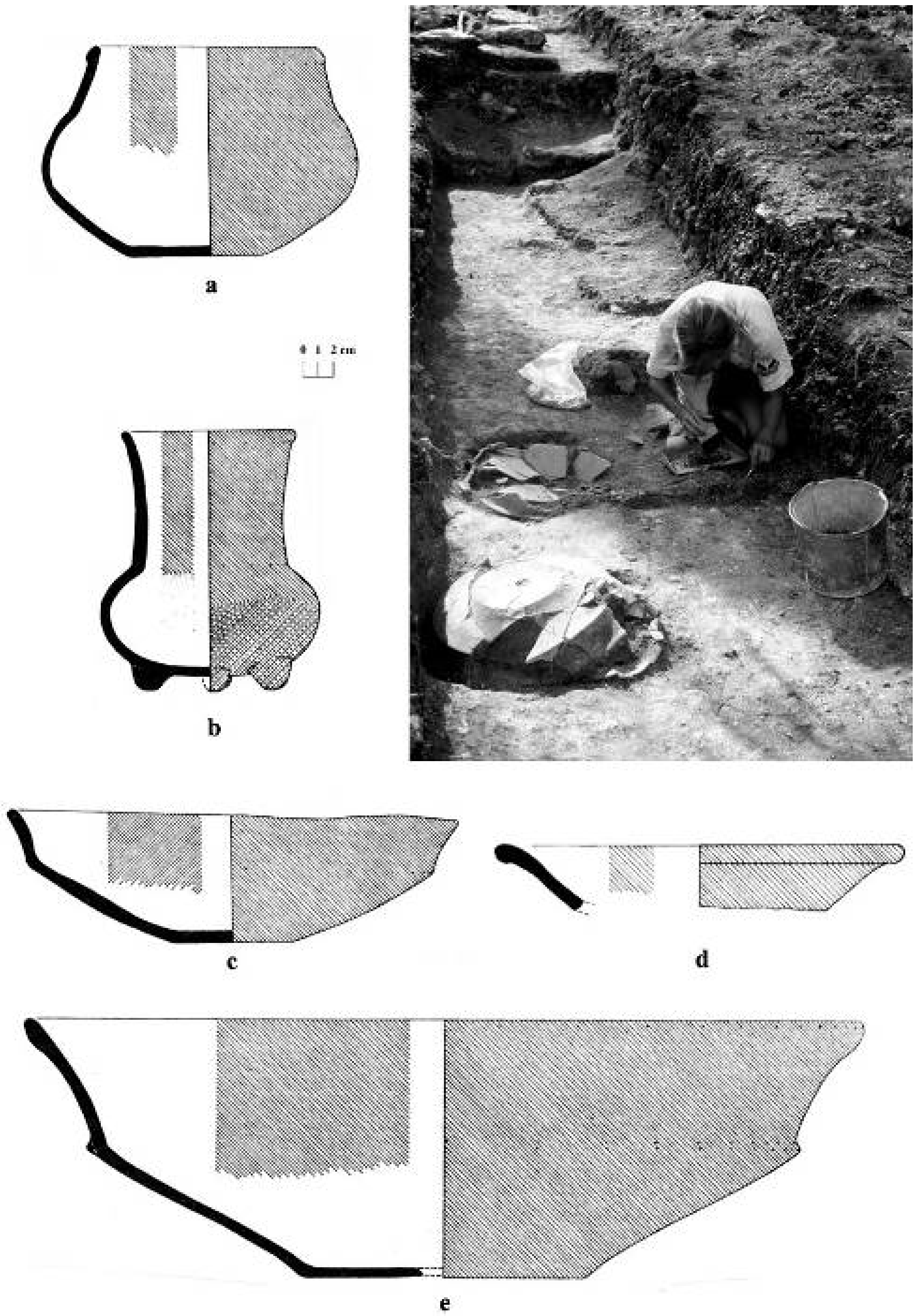

Figure 3. Photograph of axial trench through Santa Rita Corozal Structure 159 showing two Preclassic burials in situ and the Sierra Red vessels associated with Special Deposit P19A-4.

of the building. The investigations revealed a sequence of multiple constructions and 9 human interments as well as artifactual materials dating from the Late Preclassic through the early Historic Periods. No clear evidence of a Preclassic Period building was encountered within the excavation limits; however, a Preclassic Period stone-lined pit was encountered in the south excavation limit just above bedrock and 5 Preclassic

Period burials were interred below the basal floor level. Excavation in the eastern extent of the axial trench encountered 4 burials that were all aligned with each other and at the same level; the data suggest both sequential burials within a limited time span and the involvement of some social memory in their placement (Figure 2). Three of these interments, SDs P10B-2,-4, and-5, were flexed individuals with heads to the north but with no associated artifacts or pottery. A fourth burial, SD P10B-3 consisted of an extended burial with head to the north and a Sierra Red chocolate pot (Figure 2a) east of the individual's feet. Approximately 2 m west of the eastern "cemetery," another Late Preclassic interment was found. Special Deposit P10B-8 consisted of a flexed individual completely covered by a red-slipped Sierra Red platter (Figure 2b); a single bone bead also accompanied the interment. While no formally constructed building remains dateable to the Late Preclassic were encountered in the Structure 35 platform, the recovery of 5 burials of this date suggests that such constructions must have been built nearby. The recovery of Late Preclassic burials without buildings is consistent with recovered patterns from elsewhere at Santa Rita Corozal, showing that the Late Preclassic burials were often set some distance apart from their building platforms.

Operation P19: Santa Rita Corozal Structure 159 and Chultun 13

Operation P19A was designated for investigations into Structure 159. Excavation opened up 112.5 sq meters areally and also penetrated this locus with two separate trenches. A complex construction and occupation history was revealed with the earliest recovered materials dated to the Late Preclassic Period. None of the deeper excavations, however, went to bedrock; instead the investigations were halted once non-Postclassic remains were encountered. A total of ten human interments were found in this operation. Two of these were Late Preclassic burials with one or more accompanying ceramic vessels. Both individuals were flexed and placed under large ceramic containers. Special Deposit P19A-4 was covered with a large inverted Sierra Red platter. Special Deposit P19A-5 was accompanied by five Sierra Red vessels (Figure 3). The individual was covered by a large flaring bowl that covered his body, and also 4 other vessels, a jadeite bead, and a jadeite pendent. Although technically Sierra Red, all the pottery encountered within this burial was stylistically extremely late. Additional early remains were recovered from Chultun 14, located in close proximity to Structure 159. This chultun, investigated as Sub-Operation P19D, contained Terminal Preclassic (Protoclassic) ceramics and a bone rasper.

Operation P22: Santa Rita Corozal Structure 37

Investigations in Structure 37 consisted of two areal clearings, one measuring 6 m by 3.8 m and the other measuring 4.5 m by 3.6, combined with an axial trench, measuring 14 m by 1.5 m. The trench was dug to bedrock only in its eastern portion; in other areas, sealed floors were not penetrated. Thus, while Preclassic Period remains were encountered, they constitute a limited excavation sample for this locus. The earliest occupation of the area appears to date to the Late Preclassic. In the eastern end of the trench, excavation encountered a Preclassic Period rounded construction as well as three Preclassic burials, one of which contained 7 ceramic vessels. Six other burials dating to the Late Classic Period and two caches dating to the Late Postclassic Period were also excavated here.

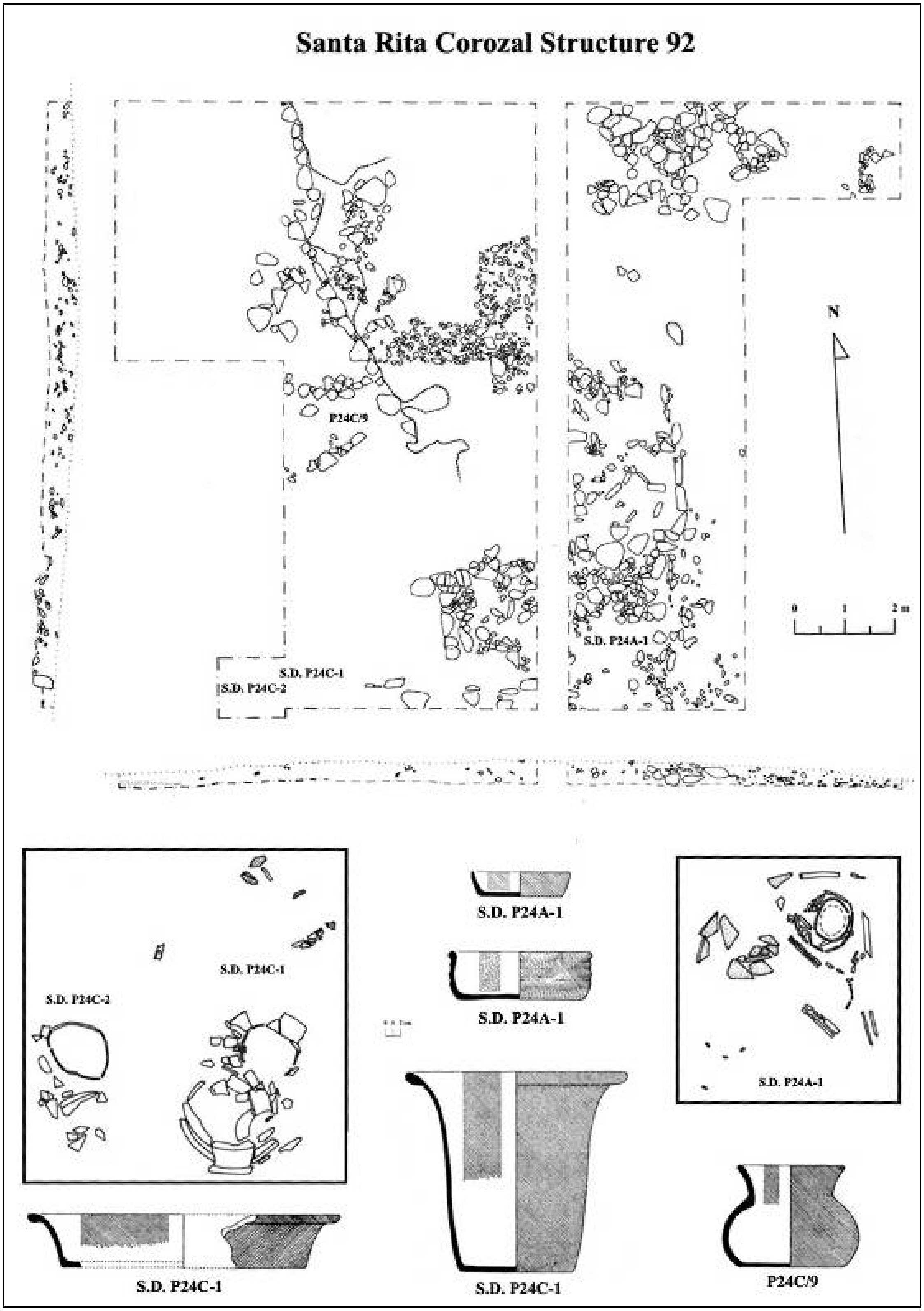

Figure 4. Plan of excavations undertaken in Santa Rita Corozal Structure 92 showing the location, plans, and some of the pottery vessels associated with interments in this construction.

All three Preclassic burials were accompanied by pottery. Special Deposit P22A-4 contained the skull of an infant covered by an inverted Sierra Red bowl. Special Deposit P22A-5 consisted of a flexed adult burial accompanied by 2 chocolate pots, 1 platter, 1 flower-pot, 1 small jar, and 2 other bowls. Special Deposit P22A-6 was the burial of a flexed adult associated with a perforated shell and a large partial Sierra Red platter.

Operation P24: Santa Rita Corozal Structure 92

Investigation of Structure 92 consisted of areal excavation combined with an axial trench that measured 12 m by 1.5 m. Two large areal excavations separated by a 50 cm balk were stripped of overburden exposing approximately 130 sq m of partial floors and walls, the majority of which were Late Preclassic in date (Figure 4). This excavation was a rare instance where Late Preclassic remains were situated immediately beneath the current ground surface. Evidence for Preclassic occupation consisted of line-of-stone building platforms, in situ Late Preclassic ceramics on floor surfaces, and 4 burials. One of these burials was encountered approximately 20 cm below the ground surface in the axial trench and the other three were barely below the surface in the extreme southwestern corner of the areal excavations. Bedrock was encountered within 50 cm of the ground surface in this southeastern locus. Pottery incorporated within 3 of these interments indicates that these remains range from Middle to Late Preclassic Period in date (Figure 4). Two of the southeastern burials dated to the Late Preclassic based on their accompanying pottery. Special Deposit P24C-1 consisted of a flexed individual interred with 2 vessels, a Sierra Red platter inverted over the body and a Sierra Red flower pot. Special Deposit P24C-2 consisted of a flexed body accompanied by a single Sierra Red flower-pot. A third southeast burial, SD P24C-3 consisted of only fragmentary long bones. The Middle Preclassic burial, SD P24A-1, consisted of a single flexed individual barely below the ground surface. This individual was accompanied by 3 pottery vessels and 4 small tubular jadeite beads. Two of the pottery bowls in this interment exhibit Swasey affinities in their forms, while the large red platter (Joventud Red) that was once inverted over the body is a Mamom-related form. Taken together, this deposit may be dated to the Middle Preclassic and is strongly suggestive of temporal overlap between these two different ceramic units. Had the two bowls been found without the dish, the deposit would have been considered to be Swasey-related; had the dish been found with no bowls, it would have been considered to be Mamom-related – thus reinforcing the problematic nature of ceramic seriation and dating in Preclassic northern Belize.

Operation P28: Santa Rita Corozal Structure 182

Structure 182 was a low platform raised no more than 35 cm above the surrounding ground surface. Two distinct construction efforts were uncovered in this investigation. Areal stripping revealed a circular Late Postclassic substructure and a Late Postclassic circular burial shrine with associated artifacts (D. Chase and A. Chase 1988). A deeper trench, measuring 9 m by 1.5 m, penetrated the Postclassic substructure, finding, first, Terminal Preclassic and, subsequently, Late Preclassic ceramic deposits associated with a circular Late Preclassic construction. Immediately beneath the core of the Late Postclassic construction, the burial of a flexed individual was uncovered.

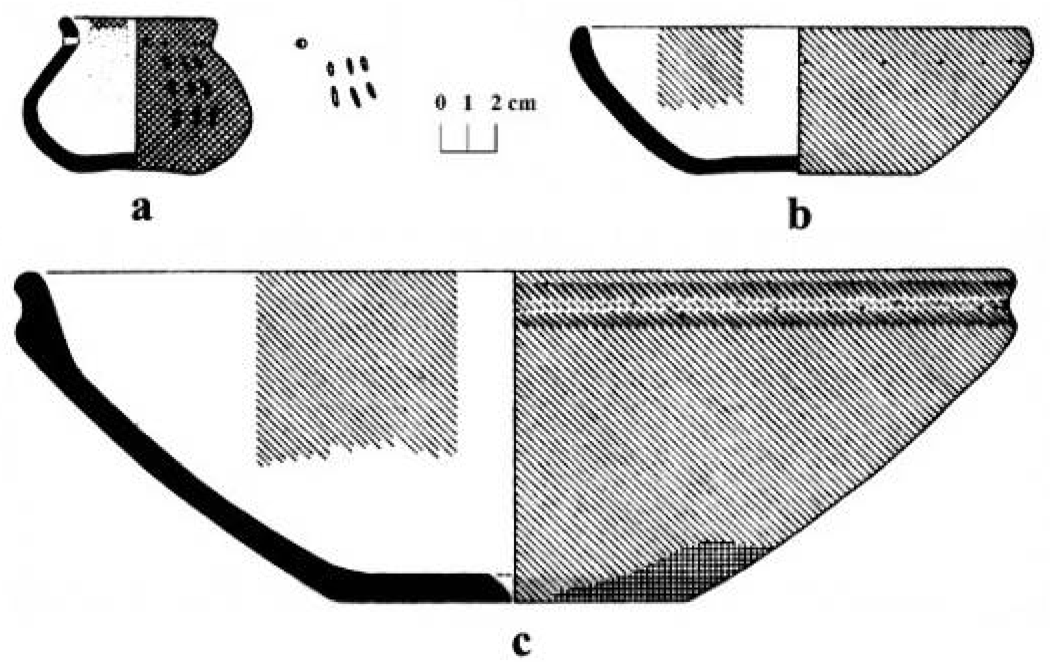

Figure 5. Three ceramic vessels associated with Special Deposit P30D-1 in front of Santa Rita Corozal Structure 189: a. Lechugal Incised; b., c. Sierra Red.

Special Deposit P28B-2 was associated with three vessels (a red tetrapod plate, a red chocolate pot, and a small brown cup) and two carved shell beads (a monkey face and a tooth); the tetrapod Sierra Red plate in this burial was inverted over the bones, much like earlier Preclassic platters.

Operation P30: Santa Rita Corozal Structure 189

Like most Santa Rita Corozal investigations, excavation of Structure 189 consisted of areal clearing undertaken in conjunction with an axial trench. As in other areas at Santa Rita Corozal, the latest – indeed the only – construction encountered was a raised Postclassic platform. This platform was raised a maximum of 55 cm above the surrounding ground surface and had two inset stairs separated by a central balk on its eastern side (D. Chase and A. Chase 1988). However, everything beneath the platform was of Preclassic date. Axial penetration of the formal construction yielded nothing in the fill, but did encounter extensive Preclassic materials in the underlying stratum. Four hearths (SDs P30B-4, -7, -10, -12) and 6 flexed burials were recovered; all were Late to Terminal Preclassic in date. Of the four hearths, one (SD P30B-4) was directly associated with 2 Late Preclassic vessels, chert pieces, and a pomacea flagellate fragment; dating of carbon (Beta-18086) associated with this hearth to BC 1920±120 is clearly far too early for the associated material. Only one of the burials (SD C30D-9) had no pottery; the other five all had accompanying vessels (Figures 5 and 6). Special Deposit P30D-1 is stylistically the latest Preclassic deposit in this locus and was accompanied by 3 vessels (Figure 5); SDs P30D-2 and P30D-8 each had 2 Sierra Red pottery vessels; SD P30D 8 included a drilled shell and an inverted

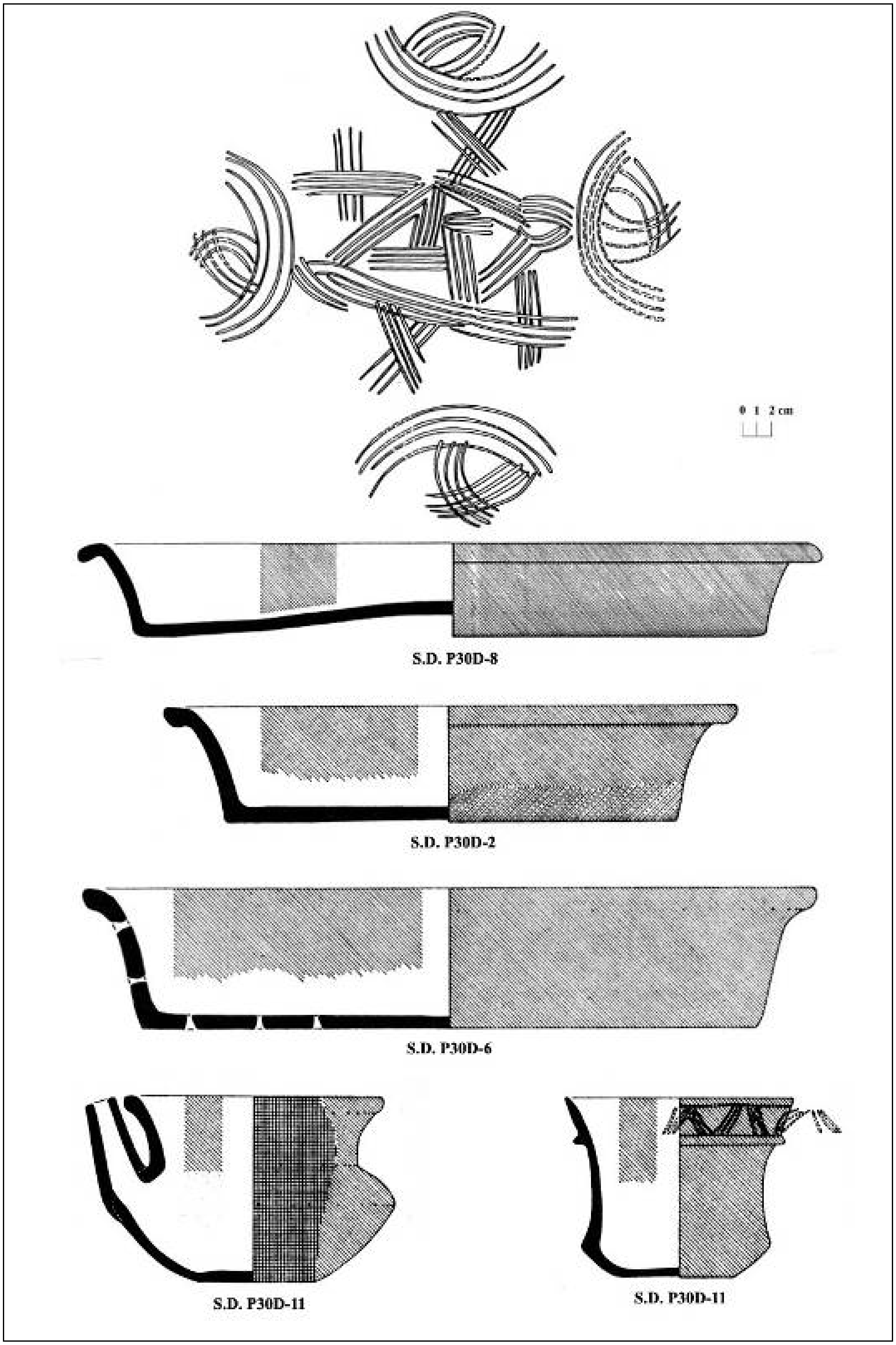

Figure 6. Ceramic vessels associated with Special Deposits from beneath Santa Rita Corozal Structure 189; vessels are either Laguna Verde Incised or Sierra Red; one vessel is extensively crack-laced

platter that had a pre-slip turtle groove-incised on its interior (Figure 6). Special Deposit P30D-11 was accompanied by 4 ceramic vessels and 14 marginella shells; the Sierra Red platter in this interment had a painted cross design on the unslipped underside.

Conclusions

The earliest remains at Santa Rita Corozal are constructions and interments associated with Swasey pottery (A. Chase and D. Chase 1987) similar to that first identified at Cuello (Pring 1977; Hammond 1999; Kosakowsky 1987a, 1987b; Kosakowsky and Pring 1991, 1998). These earliest remains, specifically those found in Structure 134, are stratigraphically separate from later Preclassic materials at this locus. Whether these remains can be considered to be "Early Preclassic," however, is presently unanswerable. Slightly later stratigraphic materials from Structure 134 can be considered to be Swasey or "Bladen"-related and have been used as illustrative examples of Swasey in international museum exhibits (e.g. Grube 1992). We believe that these remains are, in fact, coeval with Swasey/Bladen materials from Cuello and Xe ceramics from Altar de Sacrificios (Adams 1971) and suggest that the difficulty in cross-correlating pottery of this date is due to strong regional variation. Most interpretations and arguments over the placement of the earliest ceramic remains in northern Belize are based on isolated contexts and single vessels whose modes and surface treatments do not clearly fit one sphere versus another.

Thus, while it is possible to stratigraphically isolate early constructions and deposits at Santa Rita Corozal, like Cuello and the Belize Valley, the limited quantity of these materials engenders controversial discussions, but few solid conclusions. When vessels with earlier modes are found with more easily sorted redwares, like Joventud Red, there still is no consensus. At Cuello, the occurrence of Bladen-style ceramics in Middle Preclassic Mamom burials was viewed as an anachronism rather than as a co-occurrence; Bladen and Mamom are viewed as being sequential at that site (Kosakowsky and Pring 1998). Both the contents of the Middle Preclassic Structure 92 burial and the archaeological stratigraphy from Structure 134 suggest that Bladen and Mamom are not sequential, but rather overlap.

Late Preclassic interments at Santa Rita Corozal are extremely common, occurring throughout the entire site. These burials are usually accompanied by inverted Sierra Red platters, but are less likely to incorporate shell or jadeite offerings as part of their contents than are earlier burials at the site. While Sierra Red vessels are relatively easy to identify, they are far less uniform in shape and diameter than might be expected and are sometimes accompanied by incised or painted designs (see also McAnany 2004). A number of the large Sierra Red platters were crack-laced, potentially suggesting that they were not always easy to obtain and that they may have been used for a substantial period of time prior to their inclusion as burial offerings.

While a substantial quantity of Preclassic remains were recovered at Santa Rita Corozal, the investigations that were undertaken by the Corozal Postclassic Project point to the need to review sampling strategy carefully when making interpretations. Preclassic deposits at Santa Rita Corozal were only rarely encountered in close proximity to the surface and unburied by later occupation. Much of the Preclassic occupation of Santa Rita Corozal was sampled only in the deeper trenches, only incidentally being encountered in a

research design that focused on the areal stripping of Postclassic Period remains.

Yet another issue related to Preclassic interpretation is the difficulty involved in reconstructing the large Late Preclassic vessels; their fragmentary natures requires substantial patience and time to reconstruct – often a problem in today's "publish or perish" world. In the case of Santa Rita Corozal, since the Preclassic was not the focus of research, the data were carefully collected, initially described, and then essentially stored. It is suspected that similar circumstances affect interpretations on other projects. Also of great concern for the Preclassic Period is the amount of time invested in the analysis of pottery. Type Variety-Mode Analysis is the most commonly used methodology for classifying pottery in the Maya Lowlands. The system was conceived by Gifford (1960) and was argued as being " an efficient and effective medium for establishing spatiotemporal frameworks, delineating patterns of ceramic interaction, and facilitating inter-analyst communication throughout the Lowland Maya area and much of eastern Mesoamerica" (Ball 1979: 830). While counter-arguments exist over the usefulness of TVM, no other articulated system of pottery analysis has formally superseded it. Type-Variety-Mode analysis is generally used to analyze sherds within archaeological deposits, often without regard to context (e.g. Kosakowsky and Pring 1998). However, a focus on whole vessels and their contexts, as has been done at Santa Rita Corozal, is in keeping with Gifford's original intent for ceramic analysis. In his words:

> Therefore, it is important to stress that complete vessel reconstruction is not only what the archaeologist is striving for, but that whole vessels and complete special segments of vessel units ultimately comprise those variety, type, and mode units which display meaningful interpretive significance. Consequently, even though in most archaeological situations we are obliged to cope with large quantities of sherds and adapt the type: variety-mode approach to the limitations of sherd collections, our conceptual scheme is based on whole vessels and culturally meaningful segments of vessels. Throughout our researches we continuously draw support from the postulate that additions to our ceramic knowledge will eventually reveal the reconstruction of whole vessels and mode portions thereof to supplement the sherd fragments on which initial variety, type, and mode descriptions are based. (Gifford 1976:6)

As noted, this discussion has been limited to primary deposits and whole or reconstructible vessels. While the presence of whole vessels should ideally make the identification of type and variety simpler, the Santa Rita Corozal excavations do not suggest an easy solution to the Early-Middle Preclassic problem. In this case, the investigations serve to highlight the differences of interpretation gained from contextual analysis compared with those from strictly sherd-based analysis (e.g. Kosakowsky and Pring 1998). Contextual consideration of Santa Rita Corozal deposits suggest a sequence in which there is great diversity in the early mortuary remains, which seemingly are not standardized until the Late Preclassic era. Thus, while a Swasey-level can be stratigraphically isolated at Santa Rita Corozal, it would appear to be followed by conjoined Bladen- and Mamom-related materials, which are difficult to analyze because they are most often deposited separately, but sometimes occur in combination. It is also possible that social factors may be at play. While recognizing that further excavation at Santa Rita Corozal could locate an isolated

Mamom ceramic sphere of Middle Preclassic date, it seems more likely that the Preclassic sequence suggested for other sites in northern Belize, such as Cuello or Colha in which Swasey and Bladen are sequenced before Mamom, does not apply to the Santa Rita archaeological data. Rather than progressing from the Swasey sphere to a mixture of Swasey and Mamom to a true Mamom sphere, as is argued for Cuello (Kosakowsky and Pring 1998), Santa Rita moves from a limited Swasey repertoire to a diverse conjoined Mamom-Swasey admixture to a more standardized Late Preclassic Chicanel sphere (e.g. D. Chase 1983).

It is suspected that much of the analytical arguments over Early and Middle Preclassic ceramic sphere affiliations – and the resulting analytic proliferation of these early spheres – is due to limited archaeological sampling of an already highly differentiated Maya society that coevally used both widely shared ceramic forms and modes with more localized forms and modes. It is further suspected that these diverse forms and modes were often deposited in the archaeological record independently of each other by neighboring residential groups at the same site.

In summary, there are particular periods of time when change and variation appear to be the common rule in the archaeological record. During times such as these, stylistic cross-dating becomes particularly difficult. Such appears to be the case during much of the Early and Middle Preclassic Periods. Although present in the literature (Andrews 1990; Ball and Taschek 2003), attempts to stylistically cross date various parts of the Southern Maya lowlands and to link formative ceramics directly to ethnic or linguistic groups are likely to meet with only partial success. Analytic problems exist for ceramics of this era, especially in terms of the predilection to "standardize" the Preclassic Period in terms of known ceramic modes, spheres, and forms. Such analytic homogenization obscures local ceramic developments prior to the onset of the Late Preclassic Period. When combined with problematic radiocarbon dates, difficult stratigraphic correlations, and a tendency to search for the firsts of prehistory, it is no wonder that there are debates over interpreting the Preclassic Period. But, it is precisely these questions and differences of interpretation that will shape the future of archaeological research in the Maya lowlands.

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7 LATE PRECLASSIC GENDER IDEOLOGY: CHILDHOOD SOCIALIZATION AT THE DANCER HOUSEHOLD IN NORTHWESTERN BELIZE

Rissa M. Trachman

Three sets of multiple burials were excavated at the Dancer group household outside of the site of Dos Hombres in the Rio Bravo area. Two of these sets of multiple burials date to the Chicanel phase (400 BC - AD 100) of the Late Preclassic. Several of the individuals interred in the Preclassic at this household were subadults and all were accompanied by grave goods of greenstone, shell, and whole vessels. This paper focuses on specific gender identifying symbols that may be present in this set of burials. Landa (Tozzer 1941) noted that children were socialized as to their gender with specific artifacts at a very young age. Continuity and possible clarification of this ethnohistoric documentation is addressed along with published comparative data from the central lowlands

Introduction

Archaeologists are only just beginning to make inroads into the understanding of children and their importance to everyday life as well to society in the past. Children are and were social beings interacting with many aspects of daily life. They were obviously present in the past and highly capable of interaction with the people and circumstances of their life, their community, and their society.

In this paper, I will attempt to address the ways in which gender may have been socialized through the use of material culture symbols as a means of social reproduction. Three sets of multiple burials were excavated at the Dancer group household outside of the site of Dos Hombres in the Rio Bravo area. Two of these sets of multiple burials date to the Chicanel phase (400 BC - AD 100) of the Late Preclassic. Several of the individuals interred in the Preclassic at this household were subadults. Both adults and subadults alike were accompanied by grave goods of greenstone, shell, and whole vessels. This paper focuses on a specific gender identifying symbol present in this set of burials.

Defining Child and Childhood Identity

In terms of theory, which or how certain biological life stages are categorized or treated is socially constructed. Children then might be defined by the cultural perception of an individual or group of individual's life stages. Ariés' (1962) work emphasized the significance of considering historical context when attempting to define conceptions of children. It follows then, that age divisions are socially constructed within the context of a particular social history (Sofaer Derevenski 1997a:194; Gilchrist 1999:89). Defining the concept of childhood follows likewise. It is the *experience of* particular age divisions, derived contextually and historically, that conceivably constitutes the concept of childhood.

Social Reproduction and Socializing Gender

Underlying the need to explore children and their experiences archaeologically is the concept of social reproduction. Moore (1994:90) has stated that we cannot assume that the reproduction of society follows unproblematically from e biological reproduction of individuals. Just as important is the production of individuals

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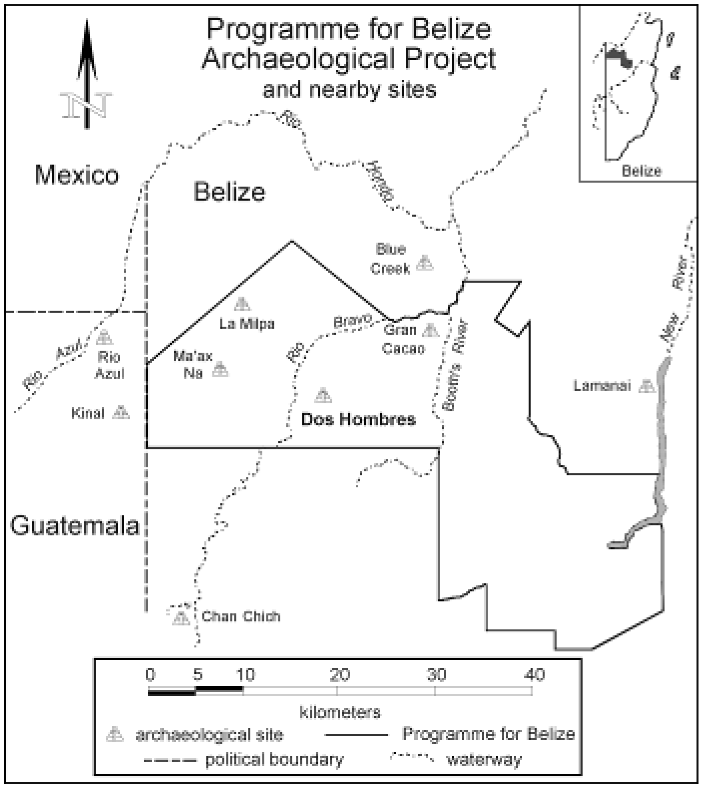

Figure 1: Map of northwestern Belize (map drawn by Jon Lohse).

who hold particular social identities and are differentiated appropriately socially.

The construction and organization of gender and other kinds of difference related to identity are central aspects of social reproduction (Moore 1994:92). By gender, I am referring to the cultural construction of sexual or biological difference in historical context (Gilchrist 1999:1). Gender specific behavior can be perceived as "learned behavior, resulting from historically specific processes of socialization" (Gilchrist 1999:9). Sofaer Derevenski (1997b: 487) has suggested that gender and age should be studied together because gendered identities are subject to change over the course of one's life. Through such a consideration, evidence from mortuary analysis can be used in order to identify age grade associations and possible changes in gendered perceptions over the life course (1997b:489).

Material Culture and Childhood

Of importance for archaeology, in terms of gendered divisions or identities of people and the reproduction of culturally and historically relevant people, is its material consequence. Gender, adulthood, childhood and other social ideals can be encoded in items of material culture, both portable and non portable. In addition to personal interactions, children learn about gender through the material world around them (Sofaer Derevenski 1997a:196, 2000:8; Gilchrist 1999:90; Sørensen 2000:9; see also Joyce 2000a, 2000b; and Joyce and Hendon 2000). Buildings, monuments, temples and other types of structures may be inscribed with information about certain people and events. They are also encoded with acceptable, normal expectations of behavior that are habitually reinforced by repetitive action (Bourdieu 1977). Portable items are imbued with relevant cultural

information and present a very special way of communicating because they can be produced, utilized, and enjoyed in much more private settings and/or in more intimate ways. Material objects also connect generations to each other and are essential for arbitrating or reconciling tradition (Sørensen 2000:9).

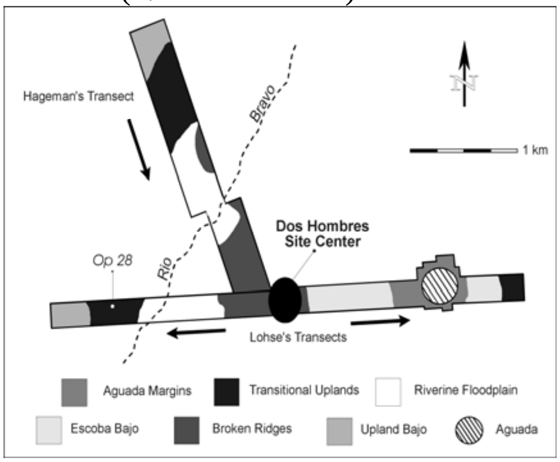

Figure 2: The Dos Hombres Settlement Transects and their environmental subzones with location of Op 28 noted (figure drawn by Jon Lohse).

Bodily adornment for example, is a fundamental mechanism for reproducing and communicating role distinctions and positioning among interacting members of a group (Dietler and Herbich 1998:242; see also Joyce 1999; Sørensen 2000). Rosemary Joyce (1999, 2000a, 2000b) has successfully highlighted the importance of clothing or costume in expressing both social and individual difference for the Maya and especially for the Preclassic Period.

Household Data from PfBAP

My interest in social reproduction and the Maya life cycle results from the recovery of a set of archaeological remains at a household in a settlement area outside the site proper of Dos Hombres in northwestern Belize (Trachman 2003). The excavations were part of my dissertation research and were carried out during the 1999, 2000, and 2001 field seasons of the Programme for Belize Archaeological Project (Figure 1) directed by Fred Valdez. The PfBAP carries out archaeological research in the Rio Bravo Conservation and Management area which is comprised of more than 250,000 acres of land in northwestern Belize (Valdez and Adams 1995).

Within the PfBAP area, the site of Dos Hombres is situated approximately 1.5 km east of the foot of the Rio Bravo escarpment in the Rio Bravo Embankment (Brokaw and Mallory 1993). The Rio Bravo, running north-south, is located just west of the Dos Hombres site center at the bottom of the escarpment. Significant portions of the settlement in and around Dos Hombres have been previously mapped. This has taken place with two different transect surveys (Hageman and Lohse 2003; Lohse 2001; Figure 2). Six different environmental subzones have been established across the settlement near Dos Hombres, specifically within the transect survey research areas (Lohse 2001; Hageman and Lohse 2003). I (2003) undertook a household investigation in two of the established environmental subzones. This paper will address data retrieved from one of the household groups studied in the transitional uplands subzone of the western transect, originally designated Operation 28, herein referred to as the Dancer Group (Figure 2) .

The Dancer Household Group lies approximately 1.75 kilometers west of the ball court of the Dos Hombres site center positioned on the Rio Bravo escarpment face. It consists of an L-shaped low platform with two structures (Figure 3) resting on a residential terrace. Excavations established at least two phases of construction at this household, Late Preclassic (400 B.C. – A.D. 150) buried by Late Classic (A.D. 650-850), as determined by ceramic chronology.

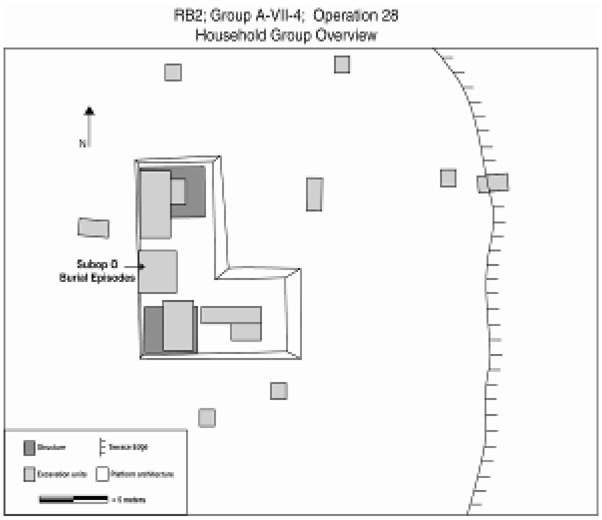

Figure 3: Plan overview of Op 28 with location of burial episodes noted (map drawn by R. Trachman).

The two structures visible on the surface are from the Late Classic phase, while wall remnants from an earlier building, probably the Late Preclassic phase, were also documented some 40-50 cm below structure 2.

During the excavation of the platform, in the platform fill between the two Late Classic structures, a series of burials were discovered (Figure 3). The burials were encountered in three sets, each consisting of multiple burials, which will be presented here as "episodes" (Saul and Saul 2003) and numbered as they were encountered in the excavations (Figure 4). Each of these episodes has several individuals associated with it, and together they represent the two previously noted time periods. The skeletal remains were very poorly preserved, as is common in the shallow household deposits of the Maya region. However, for several reasons, including the burial being subsumed in dense clay and gravel matrix, very shallow depth, and little construction or plaster overlying them, these sets of burials were particularly difficult to excavate and analyze. I would like to acknowledge that since episodes 2 and 3 are both from the Late Preclassic it is possible that they were placed in the same interment event. However, they are spatially distinct and therefore I will consider them analytically separate for the purposes of this paper.

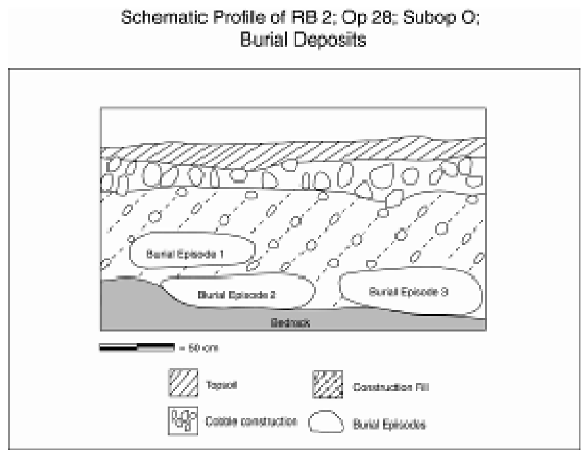

Figure 4: Schematic profile of excavation unit in which all three burial episodes occurred (figure drawn by R. Trachman).

Lauren Sullivan (2003) carried out the ceramic analysis for the Dancer household group, and Julie and Frank Saul (2003) performed the skeletal analysis. I will present preliminary findings from both of these analyses along with additional artifact analyses and interpretations of mortuary remains. Burial episode 1 is from the Late Classic, dating to the Tepeu 2-3 phase, with two whole vessels associated with it (Sullivan 2003). Skeletal data show that episode 1 has a minimum number of individuals (MNI) of four, classified as: one young adult (possible female), two other adults with no teeth recovered, therefore age was unassigned, and one child approximately 12 years in age (± 2 ½ years).

In addition to the two whole vessels an anthropomorphic engraved shell ornament was recovered (Figure 5). It is likely that the shell ornament was either sewn or strung so that the depicted person's head was upright. Drill holes were positioned such that hanging the ornament like a pendant would have been awkward

and difficult to position upright (Figure 6). It is possible that the anthropomorphic shell ornament was sewn to a piece of cloth, clothing, or blanket.

Figure 5: Anthropomorphic engraved shell ornament (photo by R. Trachman).

Two whole vessels were found in association with episode 2 dating to the Chicanel phase in the Late Preclassic (Sullivan 2003). An MNI of three was determined for episode 2, two of which are young adults, and one is a young/middle adult (Saul and Saul 2003). Four greenstone beads were found in association with cranial fragments and the mandible of one of these adults.

Episode 3 also dates to the Chicanel phase with four whole vessels recovered (Sullivan 2003). This episode has the highest MNI with six individuals, consisting of two young adults and four children. One child died at age 2-4, two at age 3-4, and one at age 5-7 (Saul and Saul 2003). A high proportion of grave goods were recovered in episode 3, likely related to the greater number of people interred. These include one greenstone bead and an array of marine shell artifacts: three small shell disc beads (Figure 7), one irregular shell bead, seven tinklers (Figure 8), a small bivalve (pelecypod) with a drilled hole (Figure 9), a univalve (gastropod) relatively unmodified (Figure 9), and finally a larger bivalve (pelecypod) with at least two holes (Figures 10). The larger bivalve (Figure 11) is likely of the genus *Spondylus* and has a natural red band present around its rim. There are at least two drill holes discernable and two engraved lines on the inside of the shell rim (ventral side). The position of the drill holes and engraved marks indicate the likelihood that it hung as a pendant. It is this specific artifact along with its mortuary context that I sought to interpret.

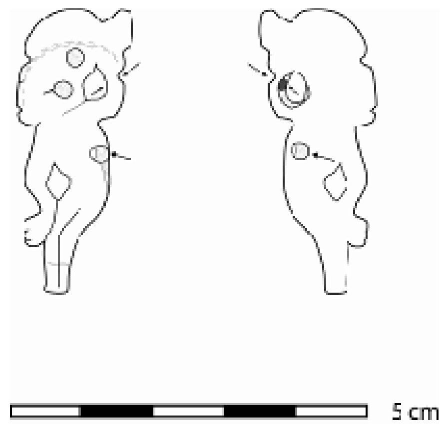

Figure 6: Engraved shell ornament with location and orientation of drilled holes noted (figure drawn by R. Trachman).

Ethnohistory of Maya Children

Landa (Tozzer 1941:159) documented several life cycle rituals and occasions for the Maya of Yucatan, including the *ceremony of the occupations* and the *caput sihil*. He also noted ornaments worn by children:

> They had then this custom in preparing for baptism: the Indian women brought up the children till they were three years old, and in the case of the little boys they used to always to put on their heads a little white bead, stuck to the hair on the top of the head. And the little girls wore a thin cord about their loins, very low, and to this was fastened a small shell which hung just over the sexual parts; and it was thought a sin and a very dishonorable thing to take off these two things from the little girls before their baptism, which was always administered

> between the ages of three and twelve, and they were never married before being baptized [Tozzer 1941:102].

It is difficult to discern from this passage the actual age(s) that the gender specific ornaments were initially put on the children. It seems it may have been at three years of age, but it is unclear since then Landa states that they were not removed before the "baptism" ceremony and that ceremony took place between the ages of three and twelve.

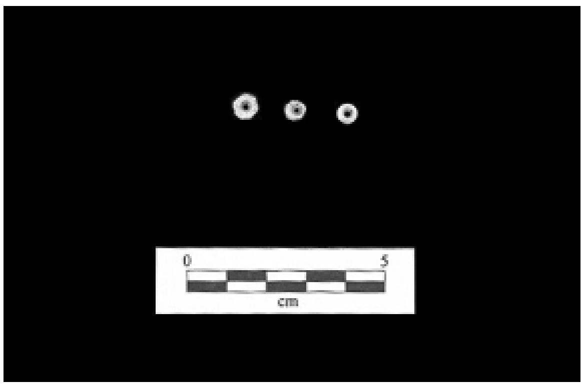

Figure 7: Three disc shell beads (photo by R. Trachman).

This "baptism" ceremony Landa (Tozzer 1941:102) referred to as a prerequisite for marriage, was actually called *caput sihil*. Literally translated *caput sihil* means "to be born anew" (Tozzer 1941:102), one reason for the parallel in meaning seen by the catholic priests. It was during this ceremony that the gender symbols of the bead and shell were removed.

One of Tozzer's footnotes acknowledges that there was some discrepancy in ethnohistoric documents as to what age this ceremony was actually performed. Landa reported that it took place between the ages of three and twelve, while the *Relación* of Motul states it may have taken place at the ages of fourteen to fifteen (Tozzer 1941:102). Other Maya researchers have interpreted the various accounts to mean that children received their gender symbolic items at a very early age possibly at an earlier ceremony and then removed at the rebirth ceremony (see Sharer 1994:482, 1996:118). Regardless, the *caput sihil* was clearly a transitional ceremony. Though when the children emerged they were considered marriageable, according to Landa, they did not often get married right away. Rather they went through another period of preparation.

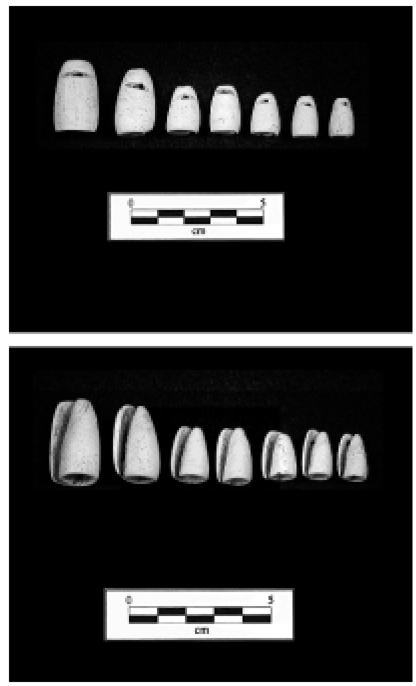

Figure 8: Seven tinklers (*Oliva* shell), two views (photo by R. Trachman).

The ethnohistoric data used here are derived from one primary source, Tozzer's translation of Diego de Landa's memoirs, and are not to be taken as unproblematic or unbiased in nature (see Restall and Chuchiak 2002). Restall and Chuchiak's recent article demonstrates well the enigmatic nature of Landa's writings. Yet it is still the best account we have of its kind.

It is also tempting to make a direct interpretation of the data from the Dancer Household Group from the ethnohistoric record. The practices recorded at the time of

the historic writing however cannot be taken as direct indicators of ancient actions, and in this case as far back as the Late Preclassic. Further consideration and material evidence are necessary to corroborate historical observations. The goal here is to suggest simply a measure of continuity, or the possibility of it, with respect to a specific practice related to socializing the gender of ancient Maya children with verification of additional evidence.

Figure 9: Left- A univalve that is relatively unmodified; Right-A small bivalve with one drilled hole (photo by R. Trachman).

Sex, Gender, and Material Culture

A number of publications, compilations, and site reports were consulted for this study (see also Trachman and Valdez 2005). For the purpose of analysis date was examined for all of those buried at these sites who fit into the category of subadult, which I consider to be all those under the age of 20. This very wide range of ages was considered in order to be as thorough as possible. Of specific interest was the existence of a shell, like that only vaguely described for girls by Landa, and that was similar to the one specifically found in the household deposit near Dos Hombres. Since Landa describes a shell hanging from the waist, I looked for marine shell pendants that were documented in association with the pelvis of subadults in these studies.

If only the most solid evidence from the comparative data is considered, the forms of the bivalve pendants at the sites of Cuello and Yaxuna are the most consistent with this case study as well as Landa's documentation. At both sites they were found clearly associated with specific individuals and located at the pelvis. Given that, a pattern emerges that suggests the comparative data reflect the possibility of continuity in the practice of placing gender symbols on children. Specifically it reflects the practice of placing a shell bivalve pendant at the waist of young females possibly as far back as the Preclassic, though admittedly few in numbers, and again in the Terminal Classic.

The Cuello mortuary analysis was conducted by Cynthia Robin (1989; Robin and Hammond 1991), in conjunction with the osteological analysis of Frank and Julie Saul (1991). At Cuello two children (approximately 10% of the subadult sample) clearly had marine bivalves with drill holes for pendant use located at the pelvis. These could be considered to be *gendered* female. They were 2-4 years and 8-9 years at the time of their death. No other shell pendants, bivalve or univalve, were found on or near the pelvises of subadults or adults, with one exception. There was an additional possible female gendered child, however the provenience of the shell was unknown and the form was slightly different.

The one adult exception, an old adult sexed male, from Cuello is a bit of an enigma. However, since the ancient Maya were known to have culturally constructed and intentionally imbued clothing/costume elements with specific meaning in terms of gender, this person might have been of the male *sex* but was *gender* female, or *transgendered*. This is a notion that Matt Looper has also explored iconographically (Looper 2002).

Given the very similar form noted from artifact illustrations and location (pelvic) of 4 of the shell pendants at Yaxuna, a similar pattern is apparent for the Terminal Classic there (Ardren 2002; Bennett 1992, 1993, 1994). Excellent field data show that at least four subadults (30% of all subadults in the sample) securely fit the pattern having the bivalve shell pendant in clear association with each of them and in the context of the pelvis. A fifth is also very likely to be gender female, with the same artifact pattern though in a disturbed context. Therefore possibly five children (and possibly as many as 7) could be considered gendered female in the Yaxuna sample. The five most clearly female children according to their material symbols interestingly all fell in the cumulative age range of 4-7 years of age at the time of death.

A possible long term continuity of this practice as far back as the Preclassic may be surprising. However, the recent discovery of the San Bartolo murals by Bill Saturno may shed further light. Taube (2005; see also Taube et al 2004) recently interpreted the murals to have served as the earliest account of the Maya creation myth that was later recorded in the Popol Vuh. The north wall mural, Taube (2005) offers, is the maize god in his resurrection coming out of the flower mountain accompanied by several young women. I would further suggest that one of these young women accompanying the maize god depicted on the north wall at San Bartolo is wearing a cord or belt around her waist with a red shell hanging in the front of her pelvis (Figure 12). She could herself have been a young prepubescent female, or she could have been performing as one and costumed appropriately as such. Therefore, the shell may be symbolic of her age as well as her gender.

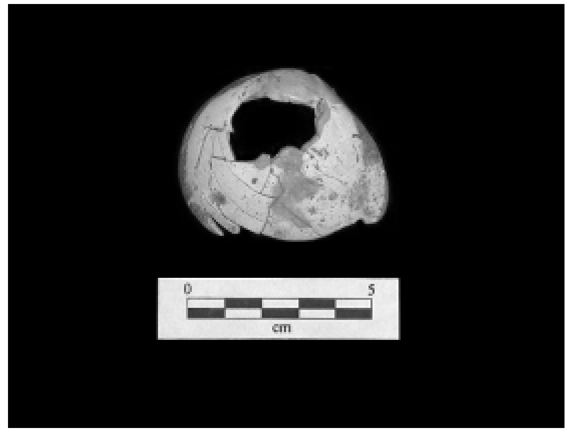

Figure 10: Larger bivalve *Spondyllus* (photo by R. Trachman).

Discussion and Conclusion

The Dancer Household mortuary deposits come to life when viewed in light of the ethnohistoric and comparative archaeological data. Determining the *sex* of child skeletal material is very difficult, especially in the poor conditions found in the tropical forests of the Maya lowlands. There is also the problematic assumption that sex equals gender. The possibility of using material culture media as identity producing indicators of gender, not sex, in child mortuary contexts at the Dancer Group is a realistic possibility.

It is likely that at least one out of the four children in burial episode 3 from the group was female in gender as signified by the red rimmed *Spondylus* bivalve shell artifact associated (see Figures 10 and 11). This correlates well with the pattern set out at Cuello, Yaxuna, and the ethnographic and ethnohistoric documentation. The larger *Spondylus* bivalve pendant is likely to be more closely associated with the 5-7 year old given the closer proximity of it to her even though pelvic material was not preserved for any of the persons in episode 3. One of the other two children may also have had a female gender symbol, the smaller shell bivalve pendant. A clear association was not possible to assign for

that artifact, so which of the two children it belonged to is impossible to say.

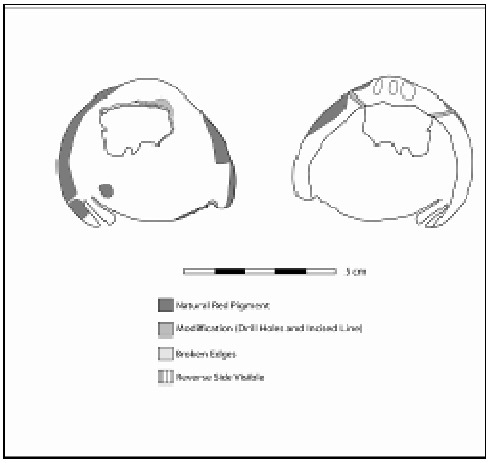

Figure 11: Line drawing of the larger bivalve *Spondyllus*. Note the position of the drilled holes and the engraved lines on reverse side (figure drawn by R. Trachman).

I have admittedly not addressed the male gender symbol reported by Landa at all. It is somewhat more problematic since “white shell beads,” as Landa described, are ubiquitous in Maya burials and come in many different forms and locations, in the mouth and near the head and neck, arms, feet, etc., representing a multitude of possibilities for different costume elements. In burial episode 3 at the Dancer group, the proximity of the three shell disc beads to each other implies their use together as an adornment for one individual, but whether they were in the hair of one of the children is not clear given the poor preservation conditions. Inherent adult bias in Landa’s observations and lack of attention to certain details is a contributor towards the difficulty in identifying these practices for male children.

Correlating the ages of the comparative archaeological data highlights an important point. At Cuello the two children with female gender ornaments were 2-4 and 8-9 years old at the time of their death, while at Yaxuna all five of the children found with them were in the range of 4-7 years old. At the Dancer Group the most likely gendered child was 5-7 years. Landa’s writings were very unclear as to the ages of both placement and removal of the ornaments which took place during the *caput sihil*. It was difficult to tell at the time of his observation whether they were placed at age 3-4 years, removed at age 3-4 years, or simply placed at some undesignated age and removed at *caput sihil* which took place before the age of twelve. The comparative data collected thus far suggests that prior to the ethnohistoric documents these symbols were worn from the age of two years at the earliest and 9 years at the latest.

Chronology may be a factor in pinpointing an understanding of the specific ages of children during practices of gender socialization as well. For our comparative data the Cuello sample is a Preclassic sample and the Yaxuna female child burials are primarily from the Terminal Classic. The Dancer Group mirrors this with child burials in both the Preclassic (burial episodes 2 and 3) and Late to Terminal Classic (burial episode 1). It is possible therefore, that the ages in which the symbols were placed and removed had changed over time.

I do not propose that an indiscriminate continuity exists from the ethnohistoric record back to the Late Preclassic. I am unable to refine completely the age(s) at which the gender encoded symbols were attached and removed or whether it is fluid or changing over time. Instead, I support a measure of continuity in a specific practice, the symbolic gender costume ornaments for children. It is possible that the practice of socializing gender identities with material culture symbols took place in the Preclassic and again in the Late to Terminal Classic periods of ancient Maya society. This practice may have even originated in the Preclassic in the Peten region of the lowlands.

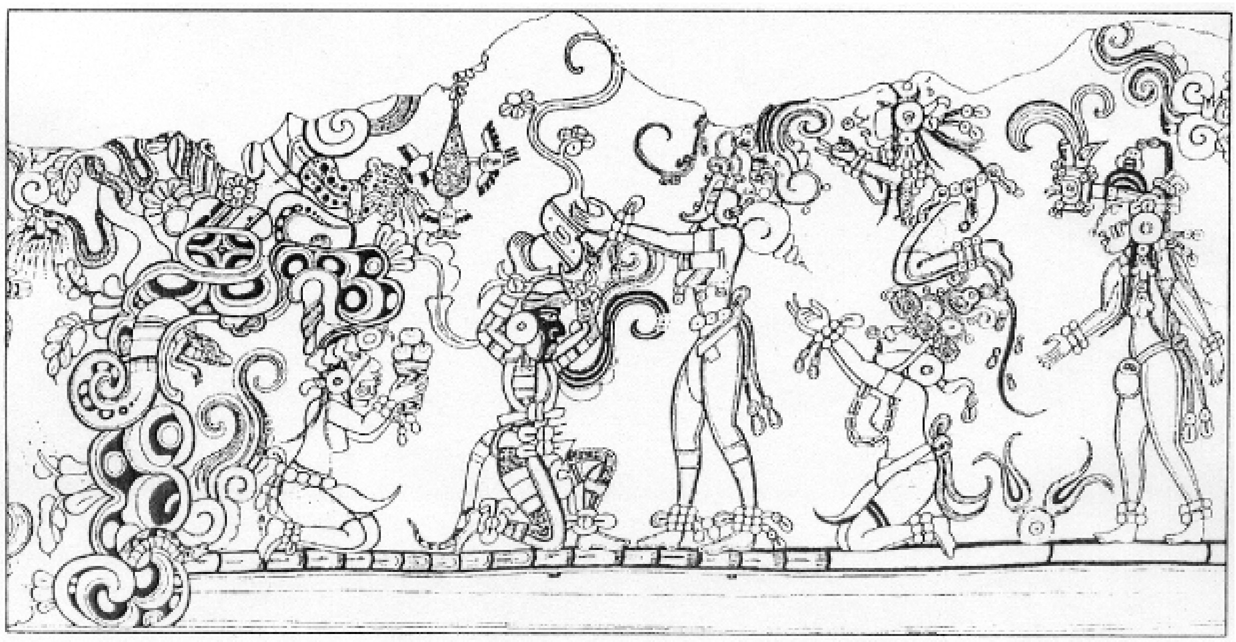

Figure 12: Line drawing of the north mural at La Pirámide de las Pinturas at San Bartolo. Note the individual at the far right with costume (after Taube et al 2004: Figura 3).

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8 RETHINKING LONG-DISTANCE EXCHANGE AND THE ECONOMIC INTERDEPENDENCE OF MAYA SITES DURING THE LATE PRECLASSIC PERIOD: THE VIEW FROM NORTHERN BELIZE

Jason W. Barrett

This paper draws on research carried out at the site of Blue Creek, Belize from 2000-2003 focusing on the consumption of stone tools. Due to their preservation, ubiquity at ancient Maya sites, and essential economic importance, stone tools represent significant, and often underutilized, markers of economic activity. Of particular interest is the high number of tool forms imported during the Late Preclassic period from production zones in northern Belize, presumably from specialist workshops at the site of Colha. A staggering 43.2% of all tool forms recovered in Late Preclassic deposits at Blue Creek came from northern Belize workshops via long-distance exchange. Only 13.6% of the tool forms recovered in Late Preclassic deposits at Blue Creek come from resources within the settlement zone, with the remainder obtained through intraregional sources. While Blue Creek was reliant on imported stone tools almost from its inception as a community, the site's location offered several important strategic advantages that made this relationship tenable. This paper reexamines the economic interconnectedness of producer and consumer sites during the Late Preclassic and challenges the simplicity of distance-decay models of utilitarian resource distribution.

Introduction

This paper examines the nature and role of long-distance exchange during the Late Preclassic period, as it is observed at the site of Blue Creek in northwestern Belize. Current views of long-distance trade remain overly simplistic. To develop an understanding of the dynamic aspects of Maya economies, our views of resource availability and site function must be expanded beyond the generalizing assumptions that are too often made.

The development of a rich, fine-grained perspective of resource heterogeneity throughout the lowlands is essential for understanding the basis of local economies and the structure of local, regional, and long distance exchange. Slowly, our views are beginning to shift in this direction. For many decades, models of ancient Maya economies were constrained by the commonly held view that broad areas of the Maya lowlands contain a generally homogenous distribution of economic resources (Stevens 1964; Wagner 1964; West 1964). From this perspective, local economies were largely redundant throughout the lowlands. This scenario provides few mechanisms for the development of complex political structures, and little motivation for regional or interregional economic integration. In retrospect, this coarse-grained view of lowland homogeneity was never congruent with archaeological and environmental data. Artifact assemblages vary across the lowlands reflecting differences in subsistence technology and the nature or intensity of resources exploited. This variation is primarily influenced by the capabilities and limitations afforded by local environmental conditions (McAnany 1990).

Several recent studies have been instrumental in redefining the Maya lowlands as a mosaic amalgamation of landscapes characterized by an irregular distribution of finite economic assets (Dunning 1996; Fedick 1996a; Lentz 2000). This perspective is certainly a better approximation of how the Maya themselves

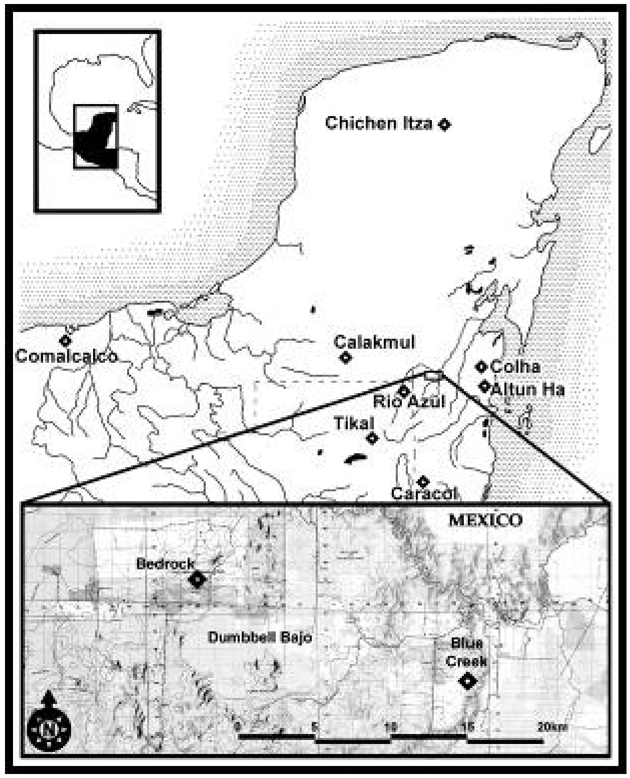

Figure 1. Maya lowlands with topographic enlargement of Blue Creek and its upper northwestern Belize environs.

(perceived their world. It also provides archaeologists with both a recognizable set of conditions through which complex political and economic structures could have developed, and testable motivations for regional or interregional economic and political integration. Research focused on the consumption of stone tools and lithic raw materials at the site of Blue Creek provides one example of how a more detailed landscape perspective can provide a richer understanding of the Maya past.

Blue Creek Site Area

The Blue Creek settlement zone is situated along the eastern edge of the Rio Bravo escarpment, which runs approximately north-south and demarcates the eastern boundary of the Peten Plateau (Figure 1). Ancient Maya settlement associated with the Blue Creek polity is found on the Rio Bravo floodplain at the base of the escarpment, as well as atop the escarpment, which rises 80-160 meters above the floodplain.

Due to the dynamic geological history characterizing this area, the distribution of lithic resources throughout the region is highly discontinuous in terms of overall availability, accessibility, and material quality. Many chert and chalcedony outcrops throughout the lowlands take the form of nodules eroding from or quarried out of limestone parent material, while others are carried in river systems. Productive deposits are often located adjacent to *bajos* where soils retain high water content, resulting in greater erosion of bedrock limestone (Kunen 2001; Tourtellot, et al. 1994). The most productive outcrops near Blue Creek occur in and around the Dumbbell Bajo, located

approximately 12km west of the Blue Creek settlement zone (Barrett 2004). These outcrops are dominated by chalcedonies and, to a lesser degree, fine-grained chert. Within the Blue Creek settlement zone, productive outcrops occur in the modest *bajo* surrounding the Rosita area north of the site core, and southwest of the site core in deep arroyos. Both deposits predominantly contain coarse-grained chert and sedimentary quartzite. Few productive raw materials are found in the savanna landscape below the escarpment.

Lithics as Economic Markers

Throughout much of the lowlands, lithic raw material was at the core of Maya subsistence technology, therefore constituting a critical resource. Not all stone is suitable for the production of chipped stone tools, and resource nodes yielding suitable material are often in finite distribution throughout landscapes and regions. Like fertile soil amenable to agricultural production, the fundamental importance of utilitarian lithic resources is a product of the Maya mode of subsistence. Well-consolidated limestone was an important element in architectural construction in most areas of the Maya lowlands. However, alternative construction materials were employed in its absence, from the simple wattle-and-daub structures ubiquitous in hinterland settlements zones (Ruppert and Smith 1957), to shell and coral structures found at some island communities (Graham and Pendergast 1989), to the monumental fired brick structures observed at Comalcalco (Andrews and Hardesty 1989). There were fewer available alternatives for stone that could be crafted into tool forms. Tools of shell, bone, and antler have been recovered in excavations throughout the lowlands (e.g. Dreiss 1994; Willey, et al. 1994), and others were likely crafted from wood. Such tools, however, could not have been used for the full range of tasks performed in Maya society. Activities such as quarrying stone, cutting and shaping timber for architecture or manufacturing canoes, and various other resource processing tasks required the use of stone tools.

Due to the fundamental importance of stone tools in most areas, lithic resources can be viewed as a critical economic resource. Moreover, their preservation in the archaeological record qualifies them as one of the more important markers of economic activity available to Mayanists scholars. In contrast, non-obsidian lithics are often overlooked in this regard due to assumptions of their ubiquity and limited interpretive value.

Patterns of Late Preclassic Tool Consumption

The notably poor quality and finite supply of lithic raw materials available in Blue Creek's immediate environs provide perhaps the most salient factors influencing the patterns of resource utilization observed at Blue Creek through time. During the Late Preclassic period, only 13.6% of all formal tools were manufactured from locally available lithic resources (Barrett 2004: 220). Regional production areas in and around the Dumbbell Bajo provided 43.2% of all formal tools, and another 43.2% were produced in the northern Belize chert-bearing zone, presumably at the site of Colha (Figure 2). Colha is the only site in that zone known to have intensively produced and distributed tool forms prior to the Late Classic period (Gibson 1986; Hester and Shafer 1984, 1994).

Several questions arise from this finding. First, how was Blue Creek able to thrive in a setting with a limited capacity for self-sufficiency? While the small population of its Middle Formative beginning would not likely have experienced any significant resource

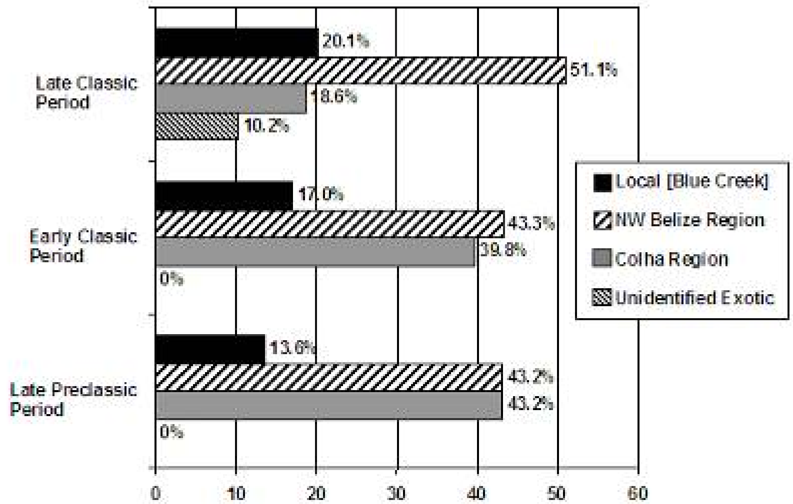

Figure 1. Identified raw materials among formal tools recovered in excavations at Blue Creek. Tabulated percentages exclude tool forms from unidentified source locations

deficiencies, the site would certainly have experienced the effects of resource depletion by the Late Preclassic without supplemental imports. A second question is why did Blue Creek rely so heavily on distant Colha when closer suppliers were available? Production areas in the Dumbbell Bajo, which were a substantial supplier of stone tools to Blue Creek, are a mere 12km distant, while Colha lies approximately 70km distant.

Blue Creek's Economic Situation

It is important to recognize the unique functional role of Blue Creek in the extensive long-distance exchange network of the Late Preclassic in order to understand how the site survived and flourished for so long in the absence of a self-sufficient resource base. Blue Creek is situated at the furthest navigable point on the Rio Hondo, a waterway believed to have served as an important commercial route from the Late Formative through Early Classic periods (Barrett 2004; Guderjan, et al. 2003). Thus, the site was advantageously positioned to have occupied an important role in the circulation of trade items between far-flung peripheral production zones and centrally located consumption zones (Barrett and Guderjan 2005). This is not to say that Blue Creek either controlled or played an important role in organizing the flow of trade goods. Given the relatively modest size of the site, it seems quite likely that Blue Creek may have only facilitated trade by providing a logistical stage for such activities.

The substantial volume of imports received at the site during the Late Preclassic and Early Classic periods suggests that the site was minimally a point of disembarkation or a transshipment locality. Adding evidentiary support for these claims, substantial quantities of jade and other exotic commodities have been recovered at Blue Creek dating to these periods (Figures 3-5), and an ancient dock complex was recently recorded on the Rio Hondo (Barrett and Guderjan 2005; Figure 6). However, noting that long-distance trade existed and recognizing Blue Creek's position within such an exchange network does little to illuminate the dynamics of this commercial system.

Figure 2. Jade beads from a Late Preclassic tomb at Blue Creek, Belize. Vessel is Sierra Red, Sierra variety. Photograph by Bill Collins. Ceramic analysis courtesy of Laura J. Kosakowsky**.**

Figure 3. Imported granite metate and travertine mano (possibly local) recovered in an undated chultun at Blue Creek, Belize

Figure 4. Shell ear ornaments incised and inlayed with jade, Spondylus and conch shell, coral and mother-of-pearl, along with a worked ceramic fragment, bone pectoral and beads of bone, jade, and hematite recovered in a Late Preclassic burial at Blue Creek, Belize. (*Photo by Bill Collins). Note: not all inlays are placed in their original positions***.**

Rethinking Long Distance Exchange

The reality of long-distance trade in commodities throughout the Maya area is well established (Blom 1932; Drennan 1984; Garber 1985; Hammond 1972). Scholars have less understanding of the social factors motivating trade, the logistical organization of resource movements, the norms of commodity distribution, the functional role of sites within the larger exchange system, or the extent to which economic integration occurred independent of political forces.

Site function vis-à-vis inter-regional and long-distance exchange has been studied from two separate but complementary approaches. The first approach is theoretically driven and predicated on the functional roles individual localities have been observed to occupy cross-culturally. Sites occupy roles as ports-of-trade, points of embarkation, and transshipment localities. (Andrews 1990; Berdan 1978; Rathje, et al. 1978). Many of these diverse functions have been described for the Maya ethnohistorically, but descriptions are brief and do not provide sufficient detail to address many of the more intriguing aspects of commercial exchange networks, much less their dynamics during the Preclassic period.

The second approach used by researchers for addressing site function as related to prehistoric exchange is comparative analysis of artifact inventories recovered in archaeological excavations (Dockall and Shafer 1993; Guderjan and Garber 1995; McAnany 1989; McKillop 1996; Mock 1997). This offers direct material evidence for resource movements. The distribution of trade goods and transportation architecture may be compared against theoretically derived expectations.

Producers and consumers are often the most archaeologically visible. But not all functional categories have the same level of archaeological resolution. For example, specialized production localities such as Colha are readily discernable due to obvious material disparities with other lowland sites (Hester and Shafer 1984). Ports of trade such as Wild Cane Caye are equally identifiable due to the extraordinarily high rate of occurrence of exotic goods (McKillop 1996). Other functions, such as distribution centers, are however more difficult to discern.

Examining the Dynamics of Long Distance Exchanges

Frans Blom's *Commerce, Trade, and Monetary Units of the Maya* (1932) represent a notable early effort in the discussion of heterogeneous distribution of economic resources and patterns of commercial exchange. In several instances, Blom infers that rather than being fundamentally self-reliant, Maya polities were dependent, to some degree, on the exchange of commodities between well-established resource zones. These inferences are congruent with the impressive distribution of resources (mainly in the form of objects rather than raw materials) away from their source areas. Blom also offered perhaps the most thorough, early description of ancient Maya economic infrastructure. Addressing the logistics of trade, Blom (1932:548) stated that "Trade moved over regular roads, crossing swamps and following mountain passes. The land trade was hauled on slave-back. Water trade was conducted in dug-out canoes, upon the rivers and along the coasts."

Archaeologists have recurrently addressed patterns of commodity distribution, with the greatest advances in this arena coming from studies of chert, obsidian, and ceramic artifacts due to their excellent preservation and the identification of production localities through visual or chemical sourcing (Barrett 2004; Braswell, et al. 2000; Dockall and Shafer 1993; Dreiss and Brown 1989; Gibson 1986; Neff 2002;

Rands and Bishop 1980; Santone 1997). The distance goods travel from production localities varies in accordance with the nature of transport, their general availability, and the nature and intensity of consumer demand. In general, goods are distributed further from their procurement or production zones when transported along waterways rather than overland (Drennan 1984; Santone 1997). Also, goods travel further when local alternatives are not available (Barrett 2004). This pattern is most observable with regard to commodities having prestige value, as witnessed by the broad distribution of jadeite, chert eccentrics, and marine shell throughout the lowlands. The prestige of these commodities may in fact be based on their exotic origin (Chase and Chase 1998; Freidel, et al. 2002). Utilitarian tool forms produced in Colha workshops are seldom recovered at sites outside a 60km radius (Santone 1997), which again calls for an explanation of consumption patterns observed at Blue Creek.

Client sites in northern Belize received compositionally different tool kits from Colha (Hester and Shafer 1994; McAnany 1989). This suggests that producers were aware of the specific utilitarian needs of consumers. If independent specialist or specialist communities produced commodities, they were likely to be flexible in response to changing consumer demand.

Rathje has pointed out that the absence of local self-sufficiency in some requisite commodity is an impetus for trade as external resource areas will be sought to meet unfulfilled local needs, and that "defining the self-sufficiency of the study area is an effective first step in applying trade models" (Rathje, et al. 1978: 148). An effective conceptual framework for understanding what Rathje called "wholesale trade", which effectively accounts for all mercantile transactions that do not occur directly between the commodity producer and end consumer, should consider the articulation of six interrelated variables that are necessarily present within such a system. The first of these is part of what Vance (1971:148-149) has called the "intelligence complex." Simply, for the effective development of a patron-client relationship between spatially distant areas of commodity production and consumption a mutual awareness must exist between the parties. In fact, the knowledge of external resource zones may have been a prerequisite for settlement within zones with limited self-sufficiency in a critical resource. Data from Blue Creek suggest that regular communication between distant sites was impressively developed by the Late Preclassic period. Rather than a period largely comprised of complex, but still locally focused chiefdoms with only the exchange of prestige goods among elites trading across regional barriers, the Late Formative may be more accurately viewed as a period of large-scale economic integration and political consolidation.

The second element within such a regularized patron-client system is the production of surplus in areas of resource abundance. The development of intensive production within such zones may have been either reactionary or entrepreneurial. In the first scenario, areas with an abundance of a given resource are actively sought out, or known areas are encouraged to develop an economy specializing in the intensive production of a particular commodity for export in order to satisfy unfulfilled demand. In the second scenario, a site may independently realize its ability to specialize at a low relative cost and attempt to develop demand among potential external consumption areas. Regardless of the details surrounding the inception of intensive production of commodity

surpluses, which is not a wholly unimportant consideration, the presence of surplus production is an essential factor in wholesale trade.

The third attribute of the wholesale system is the development and maintenance of an efficient means of commodity transport. Lacking large pack animals, it is no coincidence that commodities that traveled greater distances –and in greater volume- were likely to have reached consumer localities via water-borne transport (Santone 1997). An unexplored avenue of research is whether the infrastructure for transport was developed at the supply or consumption source, provided by a neutral party, or some combination of the three.

The fourth attribute of the system is security of the supply line. This directly relates to the consideration of commodity transport. There could be little disruption in the supply of critical resources if sites were able to persist in areas where the natural distribution of raw materials did not permit sustained self-sufficiency. There must have been some mechanism in place to provide security and stability to the transportation network, or else privateering would have made the economic interdependence of sites untenable. Evidence at Blue Creek suggests that supply line security remained stable through the Early Classic period, but may have been substantially disrupted during the Late Classic (Barrett 2004).

The fifth element of the wholesale commercial system is the development of an effective mechanism for resource distribution at consumption areas. There is growing evidence that markets provided consumers' access to at least some resources emanating from distance production zones (West 2002). The two major remaining points of contention concern the role of elites in regulating market activities, and whether or not specific commodities, such as non-critical luxury goods, entered local economies through markets or were regulated by sumptuary laws and monopolized by elites (Barrett 2004). Another contentious issue related to markets concerns the regularity of their scheduling and how embedded this may have been within other social processes (Hirth 1998).

Finally, the medium of exchange is poorly understood. All exchange beyond generalized reciprocity (sharing) entails some valuation of goods and services involved in the transaction. Important here is the concept of *equivalencies* as first developed by Polanyi (1944) and elaborated by Halperin (1994). According to Halperin (1994:86), equivalencies "indicate how much of what to transact and in what form, in what order, and in what rhythms, [they] operate in all economies and for all facets of production, distribution, and consumption." An equivalency then roughly approximates the concept of *price*, but recognizes a standardized value for goods in economies that do not employ a universal monetary unit. Ethnohistoric sources from the early Colonial period suggest that the value of commodities at Maya markets were regulated in some fashion, yet value was allowed to fluctuate according to the forces of supply and demand. Tozzer (1941:231, from Gaspar Antonio Chi: *Relación* 1582) writes: "With provisions there was no bargaining, because the prices (were always) … in the same way, except for maize which sometimes (rose in price when the crops failed…)." Other ethnohistoric accounts suggests that judges, who were likely to have been local elites, presided over Maya markets to approve 'prices' and dissuade exploitation (Ximenez, *Historia de Guatemala* 1929:94 in Blom 1832:545). At Blue Creek, the acquisition of imported stone tools must have been accomplished through the exchange of equivalencies. There is no firm evidence to determine the

exact nature of these equivalencies, but it is reasonable to suggest that they included agricultural products and upland forest products such as mahogany, copal, and animal products.

The final consideration necessary in illuminating the dynamics of the wholesale commercial system is motivation. By motivation I am referring to the origin of kinetic influences on the system (incipient capitalism, coercion, alliance and support, tribute, mutual dependence). This directly concerns the inception of intensive production of commodity surpluses discussed above. Other important considerations with regard to motivation are resource ownership and the administrative scale of production and distribution.

Markets

There is of course some question as to whether import commodities arrived at Blue Creek through the efforts of local elites or by independent entrepreneurial interests. The reality is that both are likely to have played an important role in the flow of external resources into and through the Blue Creek community. Local elites are likely to have buttressed the legitimacy of their elevated social position by establishing and maintaining social, economic, and political ties with other regions (cf. Freidel, et al. 2002; Helms 1993, 1994; Hirth 1992; Wiessner 2002). However, it is equally likely that specialized production sites, such as Colha, actively sought client sites through economic self-interest. Elite exchange may have been little more than an aesthetic overlay that lent official sanction and ceremony to otherwise autonomous, market-oriented transactions.

While evidence for actual markets is vague in the lowlands in general (Hirth 1998), and at Blue Creek in particular, it is unlikely that Colha tools reached consumers in Blue Creek's hinterland solely through elite redistribution. The volume of goods found in Late Preclassic deposits throughout Blue Creek's settlement zone suggests both a more efficient means of distribution and a more open and even means of access. Similarly, the pattern of usage demonstrated during the Late Preclassic makes the arrival of Colha tool forms via reciprocal exchange networks unlikely.

Lithic data suggest that Colha tools arrived at Blue Creek in regular supply. Their volume and degree of representation, as well as the evenness of their distribution, is compelling evidence to suggest that commoners acquired Colha tools through developed markets (Barrett 2004: 252). Such markets may not have been as formalized as those of later periods described in ethnohistoric sources (Tozzer 1941:231, from Gaspar Antonio Chi: *Relación* 1582; Blom 1832:545, from Ximenez, *Historia de Guatemala* 1929:94), but they seem to have provided an efficient and continuous means of transferring desired ceremonial and required utilitarian commodities, and connecting distant areas of intensive production and regularized consumption.

Placing Blue Creek in Late Preclassic Long Distance Trade Sphere

In addressing why Blue Creek relied so heavily on the distant production center of Colha when closer suppliers were available we must first consider that a substantial number of trade items are likely to have traveled through the site on a regular basis. Blue Creek's probable role as a logistical stage for resource exchange created a magnetic effect that naturally drew a substantial number of trade items to the site, allowing Colha tools to be consistently available. However, consumer choice is also likely to have played a substantial part in the consumption patterns observed at Blue Creek during the Late Preclassic (Barrett 2004: 252).

Where markets provided resource alternatives, consumer choice is likely to have influenced the consumption patterns we observe archaeologically. At Blue Creek, the availability of high quality import commodities presented an alternative to the poor quality resources in limited local availability. Accepting that consumers at all levels of the socio-economic scale were free to choose between local or exotic goods, it is perhaps enlightening to observe that imports were used more than 3 times as often as local stone tools.

As discussed, import commodities were obtained at a cost. That is, some equivalency was exchanged in acquiring imported tools. Research at Blue Creek also suggests that local resources were not accessed equally by all, and thus, were also likely obtained at the cost of human or material resources (Barrett 2001, 2003, 2004). In this scenario, where alternative products were available, and consumers were free to choose how to best allocate their personal resources to meet their needs and desires, choice was very likely governed by some rational notion of value, with reciprocal bonds of kinship or alliance playing perhaps a more minor role.

Not all researchers will share this view. Fowler (1991:10) has stated that most economic models used in the Maya lowlands employ various ratios, indices, and distance measures that are flawed by a formalist bias that presupposes a tendency for societies to function according to principles of economic maximization. Similarly, McAnany (1991:276) has argued that the organization of exchange systems "has been modeled using formalist's assumptions about supply and demand, discriminatory pricing, and profit motivation." While the scope of this work does not warrant a reprisal of the formalist/substantivist debate, I believe the data speak clearly on this topic.

Lithic resources from the northern Belize chert-bearing zone are some of the finest in the world. Although variation in quality exists, much of it is exceptionally fine-grained. It is seldom if ever heat-treated and it is highly recyclable. The majority of tool forms at Blue Creek constructed from Colha chert are heavily recycled bifaces (Barrett 2001, 2004). The high material quality and long use-life of Colha tool forms was almost certainly an important factor in their popularity (McAnany 1992; Shafer 1983). Tool forms made from local materials frequently fracture early in their use-life due to material flaws, they are discarded with substantial mass remaining because the material used is too dense or coarse-grained to further recycle, and local raw materials invariably require substantial thermal alteration to be rendered useful, lessening their overall durability. The choice of acquiring Colha tools, even where they commanded a greater realized cost of acquisition, may have seemed transparently rational to the ancient Maya of Blue Creek.

Regionally available tools, produced in workshops near the Dumbbell Bajo, were crafted mainly from chalcedony (Figure 7). While not of the same quality as Colha chert, the material quality was far superior to that available at Blue Creek. It is also possible that there was very little difference in the cost of acquisition based on one commodity traveling 12km overland and the other traveling perhaps more than 150km by water route. While differences in prestige may have played a role in consumer choice, it is likely that the greatest influence on consumer choice was the type of tools offered from each of the two production zones. During the Late Preclassic Colha produced tranchet tools, large ovate celtiforms, and stemmed macroblades in

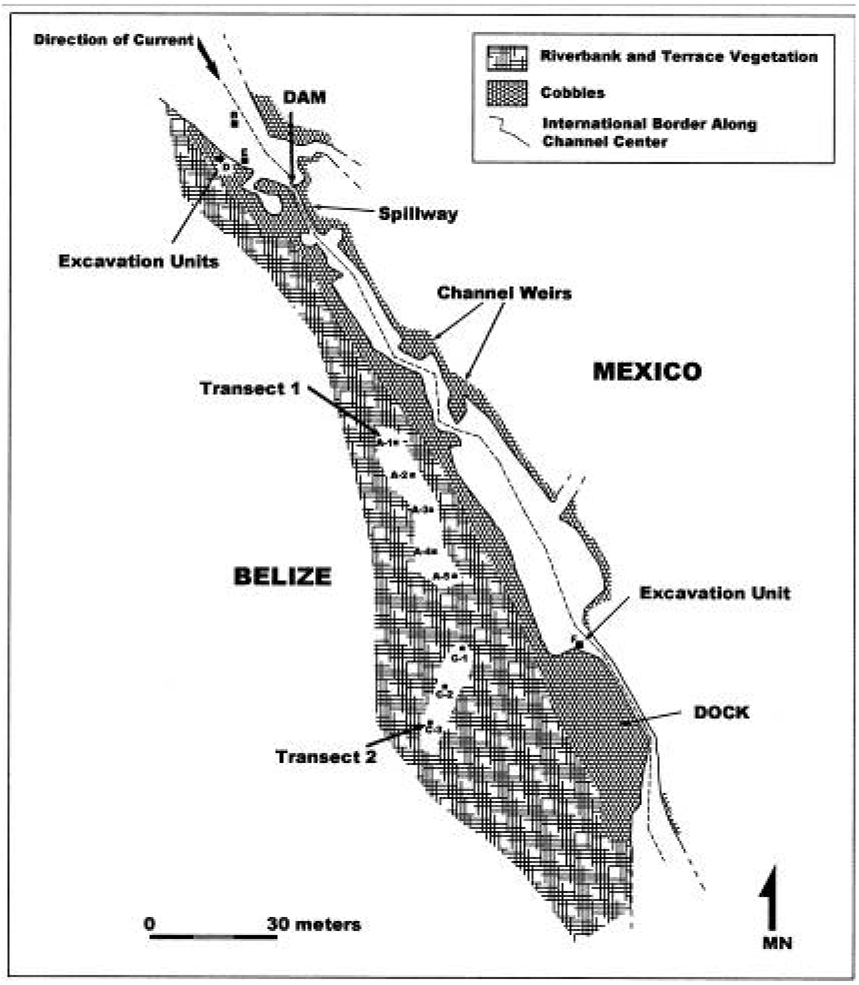

Figure 5. Maya dock, dam and channel weirs located on the Rio Hondo north of the Blue Creek settlement zone.

Figure 6. Chalcedony tool forms recovered in a Late Preclassic period production deposit. Dumbbell Bajo, northwestern Belize

great quantity (Hester 1985; Shafer 1985). Dumbbell Bajo workshops produces bi-pointed knives, smaller celtiforms, and general utility bifaces in quantity (Barrett 2001).

Summary

McAnany (1991:281) has stated that exchange networks may be better thought of as conventions rather than as necessities as all areas were essentially self-sufficient in commodities. I argue that McAnany's statement is an inaccurate representation. Self-sufficiency of sites is tied directly to the resource potential of their individual landscapes, and this has been less than rigorously explored. It is time that we stopped assuming that the Maya would have naturally settled in areas that allowed for self-sufficiency and start asking why it is that sometimes they did not. It is probable that self-sufficiency waned in some areas over time as populations grew and stressed critical resources that either were consumed beyond a sustainable level or were simply non-renewable.

Critical resources, whether fertile agricultural land, potable water, or stone suitable for tool production, were not ubiquitously available in all areas (Fedick 1996a, b; Graham 1987; Rice 1993). Different landscapes offered a range of capabilities and limitations. Landscape research focusing on these complex human-environmental relationships promises to yield substantial new information regarding the dynamics of inter-site political and economic interconnectedness at various orders of spatial resolution.

Blue Creek's natural deficiency in critical raw materials did not undermine its viability. The site's internal resource needs were met during the Late Preclassic period through relying heavily on external supply zones, because the site's strategic position in the extensive long-distance exchange network provided a magnetic effect that ensured regular resource availability. While the site did not actively control the flow of goods within this exchange system, it is likely to have provided a logistical stage for commercial interactions to take place.

The quantity and dispersion of imported tool forms in Late Preclassic deposits at Blue Creek is enticing evidence for the presence of markets at this early period. It is unlikely that utilitarian tool forms, traveling such a great distance from their point of manufacture, would be as well circulated throughout Blue Creek's hinterlands without such an efficient means of distribution in place. There is also evidence at Blue Creek that consumer choice played an important role in the patterns of resource consumption observed. This offers new horizons in the nature of questions researchers may ask of the lithic data, and promises to provide a fuller understanding of how the Maya perceived the landscapes in which they lived.

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9 COMPOSITIONAL AND STYLISTIC VARIABILITY OF LATE PRECLASSIC AND PROTOCLASSIC CERAMICS AT LAMANAI, BELIZE

Terry G. Powis, Linda A. Howie, and Elizabeth Graham

For decades, ceramic research in northern Belize has focused on stylistic rather than technological analyses. Thin section petrography offers the opportunity to examine and characterize compositional variability, on the microscopic level, as it relates to paste technology and provenience. This analytic technique has been applied to a sample of Late Preclassic and Protoclassic sherds recovered from a number of primary contexts at Lamanai. Integration of the petrographic and stylistic data provides a better understanding of local pot making activities, as well as Maya ceramic technologies, in general, and perhaps even more so to the reconstruction of regional- and local-patterns in the production, consumption, and circulation of pottery items during these time periods.

Introduction

Ceramicists working in the Maya area have at their disposal a wide range of analytical techniques for studying pottery assemblages, including the type:variety mode system, neutron activation analysis, thin section petrography, and residue analysis. Each of these techniques provides different and complementary information regarding chronology, economic interaction, and spheres of political influence, as well as patterning in the production and consumption of pottery items and their use and function within Maya society (Valdez et al. 1999:1). Approaches to the analysis and interpretation of ceramic assemblages that combine both macroscopic and scientific techniques and that integrate the physical data with contextual information enable more holistic reconstructions of human activities and behaviors involving ceramics, thereby strengthening inferences regarding ancient Maya social, political, and economic systems.

Ceramicists working in northern Belize have employed a number of different techniques to study ceramic assemblages, with the type: variety-mode approach most often forming the core of their research methodologies (Kosakowsky 1987; Kosakowsky and Pring 1998; Kosakowsky and Sagebiel 1999; Lopez Varela 1996; Meskill 1992; Robertson-Freidel 1983; Valdez 1987; Valdez et al. 1993). Technological analyses of pottery from this area of the lowland region, however, have rarely been undertaken. This is particularly noticeable for the Preclassic period where only a handful of studies have been conducted, including those by Angelini (1998) at K'axob, Shepard (1939) at San Jose, and Jones (1986) for selected pottery types at Nohmul and Cuello. The integration of the type:variety mode approach with a microscopic examination of technological attributes relating to the selection and preparation of raw materials and decorative techniques offers the opportunity to investigate and characterize the relationship between stylistic and technological variability within a ceramic assemblage. By studying pottery at both the macro and microscopic level a better understanding of local pottery-making activities, as well as Maya ceramic technologies is achieved. This detailed insight enables more reliable reconstructions of local and regional patterns in the production, consumption, and circulation of pottery items across time and space. This paper examines the stylistic and technological relationships of pottery vessels

within and among different ceramic groups, types, and varieties dating to the Late Preclassic and Protoclassic periods at the site of Lamanai.

Background

The ceremonial centre of Lamanai is situated on the western shore of the New River Lagoon, in northern Belize (Pendergast 1981) (Figure 1). The site is best known for its lengthy history of occupation, which spans from the Middle Preclassic through to the Spanish Colonial period (Graham 1987; Howie 2005; Howie et al. 2004; Pendergast 1981; Powis 2002), and also for the fact that it boasts one of the most robust records of Late Preclassic to Protoclassic settlement in the lowland region. Ceramic studies at Lamanai have focused on material recovered from structures and associated public areas within the ceremonial precinct and adjacent residential areas as part of the excavations directed by David Pendergast from 1974 to 1985 and by Elizabeth Graham since 1997. Material evidence of community life during the Late Preclassic and Protoclassic is ubiquitous, being represented by extensive artifact and architectural assemblages and numerous burials and offerings (Pendergast 1981; Powis 2002). Since archaeological investigations at the site have involved the extensive excavation of architectural structures and features, the archaeological and cultural contexts of the material evidence are well understood in terms of the history of construction, use, and maintenance of different structures and areas within the settlement (Howie et al. 2005:3).

In the 1970s and 1980s, Pendergast (1981) conducted a brief descriptive analysis of the Preclassic ceramic material at Lamanai. He did not utilize the type: variety-mode system, but instead focused on characterizing gross attributes such as shape, color, and surface treatment. His goal was to ascertain the similarities and differences among the various vessels at Lamanai, as well as to compare them to other regional sites such as Altun Ha. His modal and contextual analysis stood in contrast to that of other researchers working in northern Belize, who had adopted the type: variety-mode system of classificatory procedures and nomenclature. Pendergast was unconvinced that the type:variety mode approach was any more rigorous or scientific than descriptions unencumbered with masses of unwieldy nomenclature (Pendergast 1969, 1973). Despite the problems that he encountered (in applying established classificatory frameworks to Lamanai), Graham (1994:135-139) thought that dismissing the system entirely would not help Mayanists in their efforts to sort out what classification can and cannot do for us. Nor would it make it any easier to compare ceramics from Lamanai to other areas.

Building upon Pendergast's (1981, 1982) and Graham's (1987) previous work on the Lamanai ceramic collections, detailed analysis of the Preclassic assemblage was undertaken by Powis (2002) as part of his dissertation research. In this study, Powis (2002) employed the type:variety mode approach to ceramic classification within a contextual interpretive framework and supplemented this data with a limited detailed investigation of paste composition and slip technology, which was conducted independently by Linda Howie (see Powis et al. 2002). The underlying objectives in using more than one approach to study the Late Preclassic and Protoclassic ceramics at Lamanai were: 1) to produce a ceramic typology based on stylistic and contextual analyses in order to define, in detail, the spatial and temporal variability within the

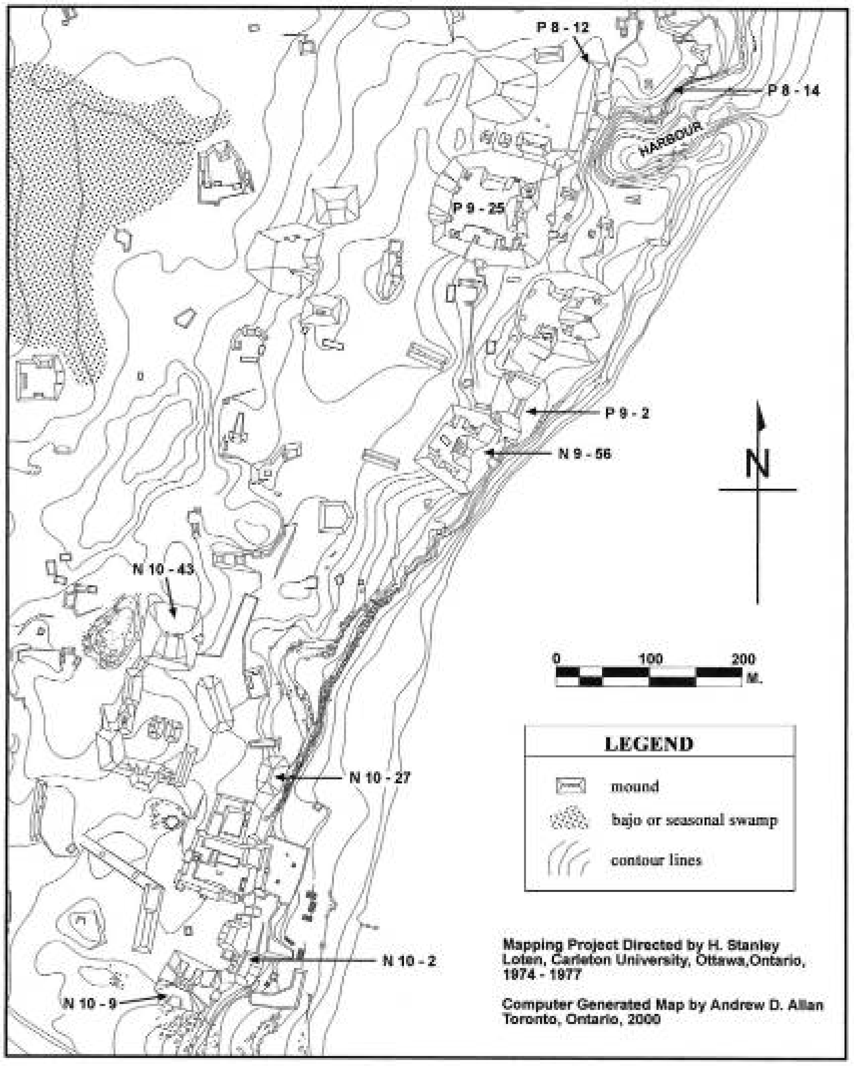


Figure 1. Map of Lamanai (after Pendergast 1981).

assemblage; 2) to identify ways in which Lamanai's population utilized their pottery from a functional perspective; and 3) to examine compositional variation among stylistically different ceramics relating to differences in provenience and approaches to paste-making. Contextual analysis was used in order to situate different aspects of the Lamanai ceramics within broader archaeological frames of reference at the community and regional levels. The depositional context and associations of a pottery vessel (i.e., where it was found, what it was found with, including the kinds of vessels associated with it, and how it is related to other material) provides the ceramicist with groupings of vessels that had meaning to the Maya (Chase 1994:181). The Maya used various combinations of vessels over both the short- and long-term, and they clearly recognized functional groupings of vessels and often purposefully left such groupings of vessels in the archaeological record (Chase 1994:181).

Stylistic Analysis

One of the most remarkable aspect of Late Preclassic Maya cultures is the widespread homogeneity in surface treatment and morphology of the pottery that was produced, known as the Chicanel Ceramic Sphere. During this time period

pottery is typologically and modally similar across the Maya Lowlands and Highlands. The consistency of slips and forms suggests a basic uniformity of ideas, conservatism, and relatively little individual site expression (Powis 2002:97). The pan-regional participation in this shared ceramic tradition occurred primarily in the last four centuries before the birth of Christ, with most sites, including Lamanai, producing Chicanel wares. After 100 or 50 B.C., this ceramic uniformity began to break down with the appearance of a broad series of new ceramic attributes. This period is known as the Protoclassic, and is characterized as a time of technological experimentation and individualistic artistic expression.

The Late Preclassic to Protoclassic assemblage at Lamanai includes 140 whole and complete vessels, which were recovered mainly from primary contexts, such as burials, caches, and middens (Powis 2002:67). Powis' analysis of this corpus of material produced three separate facets: the Lag facet, which is the earliest and dates from 400 to 100 B.C.; the Early Zotz facet, dating from 100 B.C. to A.D. 150, and the Late Zotz facet, dating from A.D. 150 to 250 (Table 1). Stylistically, Late Preclassic and Protoclassic ceramics at Lamanai are very different, even though they overlap in time. Lag pottery fits very well into the Chicanel Ceramic Sphere, exhibiting waxy-textured monochrome slips (red, black, and cream), which occur on typical forms such as flat-based, flaring-sided dishes, bowls, plates, and buckets with horizontal everted rims and labial flanges (Powis 2002:97). Approximately 75% of Lag pottery belongs to the Sierra Ceramic Group. Decorations include pre-slip incising, grooved-incising, fluting, punctating, and post-slip gouge-incising. The assemblage also contains a number of vessels modeled in zoomorphic shapes of birds and crocodiles.

Early Zotz pottery is marked by the introduction of comparatively thin and hard slips, the occurrence of concentric horizontal streaky marks on vessel surfaces, the application of multiple slips, the appearance of tetrapodal supports, and the absence of effigy vessels (Powis 2002:246). Red slipped pottery is still dominant, comprising nearly 80% of the collection. The ceramics of this period are considered transitional between Chicanel and Protoclassic wares.

The Late Zotz facet of the Lamanai assemblage exhibits many of the characteristic traits often associated with the Protoclassic. It contains true red-on-orange dichrome vessels, polychrome vessels, high gloss orange wares, and Usulutan wares. Typical forms such as the bridge-spout jars occur as do mammiform foot supports and ring bases (Powis 2002:346). Trickle line or “dribble” decoration is the dominant decorative treatment and involves both golden-brown and black lines applied to red slipped vessels. During this period, Chicanel-style red wares continue to be produced, but in much lower quantities, with red wares such as Sierra Red, Cabro Red, and Puletan Red-and-unslipped comprising only 54% of the assemblage.

Petrographic Analysis

Petrographic analysis was undertaken on a selected sample (N=16) of the Late Preclassic and Protoclassic vessels to determine whether the types and varieties identified in the stylistic analysis also shared important technological similarities (Table 2). The information yielded by thin section analysis of a sub-set of the ceramics was intended to complement that obtained through stylistic analysis using the type: variety-mode approach. This technological approach was considered as a preliminary step toward understanding changes that took

Time	Major Periods	Uaxactun	San Jose	Lamanai	Colha	Cuello	Barton Ramie	Altar de Sacrificios
1500				YGLESIAS	RANAS			
1400	Late			CIB				
1300	POST-				CANOS		NEW TOWN	
1200	Middle						LF/EF	
1100	CLASSIC			BUK	YALAM			
1000	Early							JIMBA
900	Terminal	3	SAN JOSE V	TERCLERP				
800	C	TEPEU 2	SAN JOSE IV		MASSON		SPANISH LOOKOUT	BOCA LF/EF
700	L Late			TZUNUN				PASION LF/EF
600	A	1	SAN JOSE III	SHEL	BOMBA		TIGER RUN	CHIXOY
500	S	3						[illegible]
400	S Early	TZAKOL 2	SAN JOSE II	SAC	COBWEB		HERMITAGE	AYN LF/EF
300	I C	1						SALINAS
200				LF/EF				
100	PROTO-CLASSIC				BLOSSOM BANK		FLORAL PARK	
AD 1 / BC 1		CHICANEL		ZOTZ		COBOS CHICANEL	MOUNT HOPE	LF/EF
100	Late							PLANCHA
200	P			LAG	ONECIMO		BARTON CREEK	
300	R							
400	E							SAN FELIX
500	C L	MAMOM	SAN JOSE I		CHIWA LF/EF	LOPEZ MAMOM		LF/EF
600	A Middle			MESH LF/EF			LF/EF	
700	S							
800	S				BOLAY	BLADEN	JENNY CREEK	XE
900	I							
1000	C					SWASEY		
1100	Early							
1200								

Table 1. The Lamanai ceramic complexes with comparative site sequences.

place in pottery manufacturing processes at the local and non-local levels during the Late Preclassic and Protoclassic periods. Special attention was placed on identifying fundamental differences in paste recipes, or the kinds of raw materials used to make different ceramic bodies and the way in which slips were applied to produce a broadly similar surface finish (slip technology) (Powis et al. 2002).

Whitbread's (1989, 1995:365-396) system for the characterization and description of ceramic fabrics (pastes) was used to investigate compositional variation within the ceramic sub-set at the microscopic level. Unlike approaches to microscopic analysis that estimate proportions of inclusion compositions, thereby focusing on the mineralogy of ceramic fabrics, Whitbread's system provides a basic framework for the classification and characterization of fabrics according to a range of physical properties and features, with the underlying aim of identifying technological processes as well as proveniences. A major benefit of this approach is that it enables the analyst to investigate the similarities and differences among fabrics with regard to both the nature of the raw materials used and human behavior. Another advantage is that it permits examination of the association of minerals and, as a visual technique, textural criteria, enabling fabrics to be subdivided or discriminated even when they are mineralogically similar. Within the context of the present study, the petrographic analysis constitutes an independent investigation of ceramic variation, being conducted without reference to the stylistic data. A laboratory study of raw material

Sample No.	Context (Lot No.)	Provenience	Ceramic Type	Ceramic Group	Ceramic Form	Ceramic Phase
1	1128/1	Harbour (Op. 99-2)	Unnamed Cream-over red Incised	Sierra	Plate	Early Zotz
2	496/18	Chultun P8-2	Unnamed Cream-and-modeled	Flor	Vase	Late Zotz
3	236/1	Structure P9-2	Unnamed Cream-polychrome	Aguacate	Bowl	Late Zotz
4	520/5	Chultun P8-2	Cabro Red: Trickle Variety	Cabro	Bowl	Late Zotz
6	449/2	Structure P8-9	Sierra Red: Sierra Variety	Sierra	Spouted Jar	Lag
7	449/6	Structure P8-9	Sierra Red: Variety Unspecified	Sierra	Spouted Jar	Lag
8	732/2	Structure P8-103	Sierra Red: Variety Unspecified (Red-and-black)	Sierra	Dish	Late Zotz
9	125/6	Structure N10-2	Matamore Dichrome: Matamore Variety	Cabro	Dish	Early Zotz
10	496/10	Chultun P8-2	Puletan Red-and-unslipped: Puletan Variety	Sierra	Jar	Late Zotz
11	480/1	Structure P8-9	Lechugal Incised: Grooved-incised Variety	Polvero	Jar	Lag
12	521/1	Chultun P8-2	Pahote Punctated: Pahote Variety	Cabro	Jar	Late Zotz
13	521/9	Chultun P8-2	Unnamed Red-rimmed Orange and Trickle	Aguacate	Bowl	Late Zotz
14	496/5	Chultun P8-2	Orange-polychrome: Ixcanrio Variety	Aguacate	Bowl	Late Zotz
15	520/3	Chultun P8-2	Cabro Red: Trickle Variety	Cabro	Bowl	Late Zotz
16	364/2	Structure N10-43	Laguna Verde Incised: Grooved-incised Variety	Sierra	Dish	Lag
18	440/2	Structure P8-11	Flor Cream: Indian Church Variety	Flor	Dish	Lag

Note: All data are presented in Powis (2002).

resources (rocks and clays) available in the area surrounding Lamanai, undertaken as part of Howie's (2005) work on the Terminal Classic to Early Postclassic pottery collection, provided an important comparative base for the interpretation of the petrographic data, and especially for identifying fabric groups compatible geologically with local raw material resources.

Thin section analysis produced six distinct classes of pastes (fabrics), which were defined on a very general level according to temper type, or the constituents of the fabric that were intentionally added to the clay component (Howie et al. 2005). Differences among the classes in their rock and mineral content and in the physical characteristics of the mineral, rock, and other aplastic inclusions relate, in part, to geological differences in the clays used to make these general fabric types. There is also significant compositional and textural variation within each class that can be interpreted as reflecting natural differences in the clays used to make individual vessels. The six fabric classes based on temper type include: (1) crushed sherd or grog-tempered; (2) crystalline calcite tempered; (3) sparry calcite tempered; (4) grog and crystalline calcite tempered; (5) grog and sascab tempered; and (6) an untempered dolomitic marl-based paste.

Calcite Tempered Fabrics

The dominant temper type within the sample set is calcite. Eight of the 16 samples contained either crystalline calcite, the colorless, coarse-textured form of the mineral (#6, 7, and 13) or sparry calcite, the white, sugary-textured form (#8, 9, 10, 14, 18). In both cases, the calcite temper appears to have been added to the clay component in a freshly crushed form. Vessels with calcite tempered pastes date to both the Late Preclassic and Protoclassic periods. Calcite tempering is associated with a range of surface treatments, including incised and trickle line decoration and monochrome, bichrome, and polychrome surfaces, as well as different vessel forms (e.g., dishes, bowls, small jars, and spouted jars). For example, vessels containing crystalline calcite temper include Sample #6, a Sierra Red spouted jar that comes from a burial (Burial 2) inside a small pyramidal structure (P8-9), and Sample #13, an Unnamed Red-rimmed Orange and Trickle bowl that comes from a stratified midden located inside a large chultun (designated as P8-2), located at the north end of the site (Powis 2002:57). Examples of vessels that contain sparry calcite temper include Sample #8, a Sierra Red:Variety Unspecified (Red-and-black) dish that comes from a burial (Burial 2) in a small residential structure (P8-103) and Sample #10, a Puletan Red-and-unslipped jar that comes from the same midden deposit in P8-2.

Grog-Tempered Fabrics

The grog-tempered class includes three of the 16 samples analyzed (#2, 11, and 16). Geological differences in the clay component of these fabrics indicate that they derive from different clay resources in each case. As with calcite tempering, grog tempering is associated with vessels that date to both the Late Preclassic and Protoclassic periods. Nevertheless, all of the vessels within this class are monochrome vessels: red slipped dish, a black slipped jar, and a cream slipped vase. These vessels include Sample #2, an Unnamed Cream-and-modeled vase that comes from the chultun (P8-2), and Sample #16, a Laguna Verde Incised dish that comes from a hearth (Hearth 1) located beneath Structure N10-43, the largest temple constructed at the site. At K'axob, Angelini (1998:215) found that bowls and dishes were more likely to contain grog temper, whereas at Lamanai it is evident that that grog tempering is

associated with a wider range of vessel forms.

Fabrics Tempered with Grog and Calcite

Three of the samples analyzed contain both grog and crystalline calcite temper (#3, 4, and 15) and mineralogical and textural difference in their groundmasses clearly relate to natural differences in the clays used to make these different vessels. All of the vessels date to the Late Zotz or Protoclassic period. As with the other fabric classes, pastes containing both grog and crystalline calcite temper occur with different forms, slip colors, and surface decorations. For example, Sample #4 derives from a Cabro Red bowl with trickle decoration, whereas Sample #3 derives from an Unnamed Cream-polychrome bowl. The combined use of grog and calcite as a particular tempering practice has also been noted to occur at other sites in northern Belize, such as Nohmul (Jones 1986) and San Jose (Shepard 1939).

Fabric Containing Grog and Sascab Temper

Only one fabric within the samples set contains grog and sascab temper. This vessel (Sample #1) is an Unnamed Cream-over-red incised plate dating to Early Zotz times. It was found on bedrock in an excavation unit (Op.99-2) in the Harbour, which is located at the north end of the site. The use of grog in concert with crushed sascab, as a particular tempering strategy has not been recognized previously.

Dolomitic Marl-Based Fabric

This final fabric class is also represented by a single vessel (Sample #12). This fabric is characterized by a fine-textured, well-sorted groundmass dominated by rhombic grains of dolomite. The textural properties of this fabric, suggest a basic paste recipe involving untempered clay, perhaps highly processed to achieve the uniform, fine texture. The vessel has been identified as a Pahote Punctated jar and dates to the Late Zotz times. This jar was recovered from the chultun midden.

Fabrics Containing Organics Residues

Of the 16 samples that were analyzed, three were found to contain burnt organic remains (#3, 15, and 16). These residues exhibit a consistent morphology and tend to be associated with channel voids. These characteristics suggest that these residues may represent an organic temper that was incorporated into the paste in addition to other tempering materials. The occurrence of these residues does not appear to correlate with any particular time period, stylistic category, or with a specific set of raw materials. The potential use of organic tempers has not been previously recognized in past petrographic studies of Late Preclassic to Protoclassic ceramics.

Relationships between the Stylistic and Compositional Categories

This section discusses how the microscopic compositional data integrates with the typological categories or 'units' identified through classification of the Lamanai ceramics according to the type: variety-mode system. The sixteen samples analyzed petrographically were taken from a variety of ceramic types from within five different ceramic groups: Aguacate, Cabro, Flor, Polvero, and Sierra. Our results not only show that there is no direct relationship between the fabric classes defined according to temper type and the type: variety groups, but also that there are significant compositional differences among the vessels within these groups. For example, the two samples in the Sierra Group (#6 and 16) dating to Chicanel times have different compositional characteristics: the former containing crystalline calcite temper and the later containing grog temper (Figures 2a and 2b). These samples are also distinguished from their later counterparts (#8 and 10) dating to Protoclassic times,

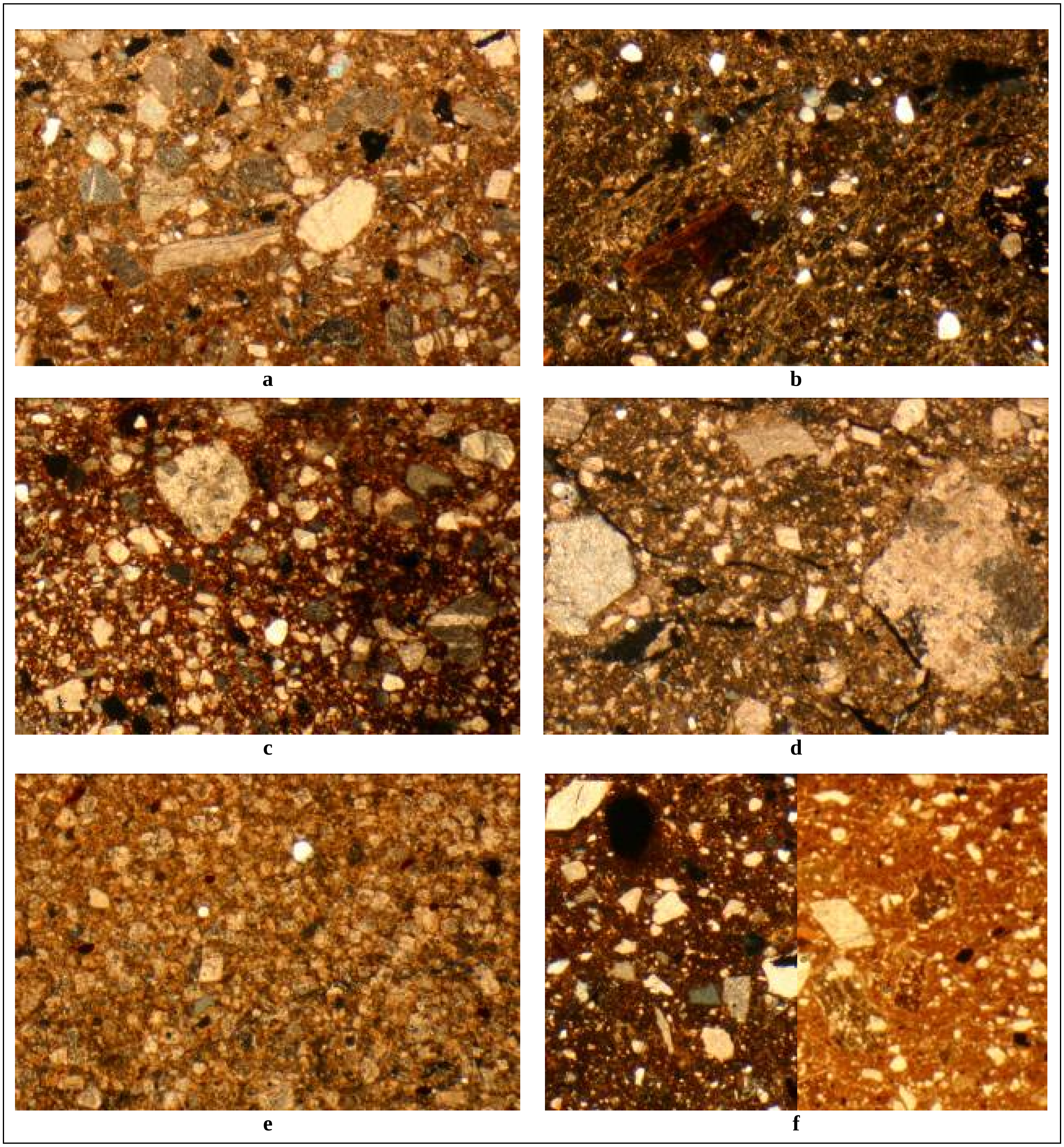


Figure 2. Photomicrographs of Sierra and Cabro fabrics showing variation in composition; a) sample 6 in XPL, Sierra Red: Sierra Variety (Sierra), crystalline calcite tempered fabric; b) sample 16 in XPL, Laguna Verde Incised: Grooved-Incised Variety (Sierra), grog tempered fabric; c) sample 8 in XPL, Sierra Red: Variety Unspecified (Sierra), sparry calcite tempered fabric; d) sample 10 in XPL, Puletan Red-and-Unslipped: Puletan Variety (Sierra), sparry calcite tempered fabric; e) sample 12 in XPL, Pahote Punctuated: Pahote Variety (Cabro), dolomitic fabric and f) sample 4 in XPL (left) and PPL, Cabro Red: Trickle Variety (Cabro), grog tempered fabric.

which contain sparry calcite temper (see Figures 2c and 2d). Clear geological differences in the clay components of these samples are also apparent. The same observations can be made regarding the samples taken from the Aguacate (#3, 13, 14), Cabro (#4, 9, 12, 15), and Flor (#2, 18) Groups (see Figures 2eand 2f).

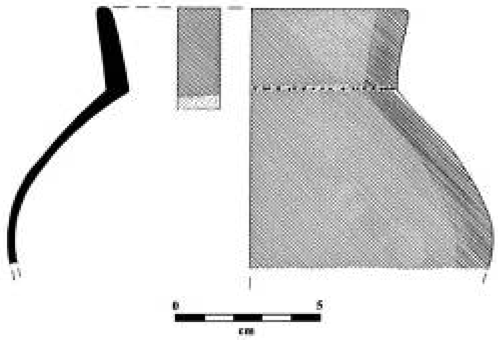
In the case of the Cabro Group, certain compositional differences among the vessels clearly relate to provenience differences. Of the four vessels representing this group (#4, 9, 12, and 15), three of them (# 4, 9, and 15) contain sparry or crystalline calcite temper and their clay components are geologically compatible with the clay resources that occur in the immediate vicinity of the site (see Figures 2 e and 2f). Samples #4 and 15 derive from vessels recovered from the midden inside the chultun (P8-2), whereas Sample #9 derives from a vessel recovered from a sherd concentration (Sherd Feature 1) located inside a small pyramidal structure (N10-2). The remaining vessel in this group, a Late Zotz jar deriving from the chultun midden (#12), has a dolomitic marl-based fabric, and is compositionally unique within the sample set as whole (Figure 3). Containing dolomite, this fabric is incompatible with the local geology, indicating it derives from raw material resources that were not available in the local area. The geology of this fabric (#12) indicates a connection to the northeast coast of northern Belize and southern Yucatan and adjacent areas, including the lower reaches of the New River, where sandy marls overlie dolomite and dolomitic limestone (most likely of the Tertiary Cayo Group). It is noteworthy that this fabric is strikingly similar to the numerically dominant fabric type associated with Late Classic fine wares at Altun Ha (Howie et al. 2004; Howie-Langs 1999), which might possibly suggest that this vessel originated from this particular area of northern Belize.

Slip Technology

Thin section analysis provides an opportunity to take a closer look at the slips that have been applied to the surfaces of vessels and to observe general similarities and differences between surface treatments that have different macroscopic properties. Such information provides insight into variation in approaches to vessel decoration and surface finishing and aids in the identification of slipping practices, whether they be specific to time periods, particular potters, geographic regions, or sites. At Lamanai, the microscopic analysis of slips has led to the identification of at least three different approaches to slipping:

1. The application of a thick layer of slip to the vessel’s surface (#12).
2. The application of multiple layers of slip to the vessel’s surface (#1).
3. The application of a thin layer of slip to the vessel’s surface (#16).

Within each of these basic categories there is variation in terms of slip color (in plain polarized light [PPL] and cross polarized light [XPL]), birefringence and optical properties. In addition, in some cases, the slip appears to sit atop the ceramic body, occurring as a clear independent layer, while in other samples the boundary between the slip and the body is diffuse to merging. These latter cases, may reflect a technique in which burnishing is combined with slipping. When the stylistic characteristics of the vessels are considered at least three interesting patterns emerge. Firstly, thick slips only occur on monochrome red jars (e.g., #12) (Figure 4a). Secondly, platy slips, indicating the application of multiple slip layers only occur on the monochrome cream and trickle varieties (e.g., #1) (Figure 4b). Thirdly, a comparatively thin slip layer predominantly



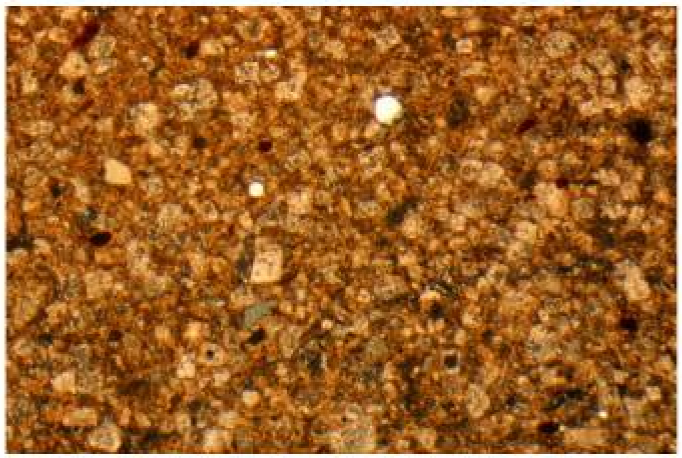


Figure 3. a) Pahote Punctated:Pahote Variety jar; b) photomicrograph of Pahote Punctated: Pahote variety vessel.

occurs on bichrome and monochrome red dishes (e.g., #16) (Figure 4c).

Evidence of Local Production

The archaeological specimens included in this study were compared to fired samples of local clay, collected and analyzed as part of geological survey conducted by Howie (2005) of local raw material resources available for pottery manufacture. Clay samples were taken from nine different locations on the site-side of the New River Lagoon and from five different locations in the area of Pine Ridge situated on the east side of the lagoon, directly opposite the site (Figure 5). Comparison of the petrographic characteristics of the archaeological specimens with those of fired samples of modern local clays led to the identification of two archaeological fabrics in which the clay component is virtually compositionally identical to modern clay samples taken from the Harbour area of the site. These clays form in association with outcropping Cretaceous limestone and are clearly distinguished from other local clays by their distinctive textural and mineralogical characteristics. Both of the archaeological samples belong to the Sparry Calcite Tempered class, but they derive from vessels with different stylistic characteristics and temporal associations. Sample #18 derives from a Lag facet monochrome cream slipped dish that comes from a midden inside a residential structure (P8-11) (Figure 6), while Sample #14 derives from a Late Zotz polychrome bowl that comes from the chultun (P8-2) (Figure 7). The geological similarity between these archaeological

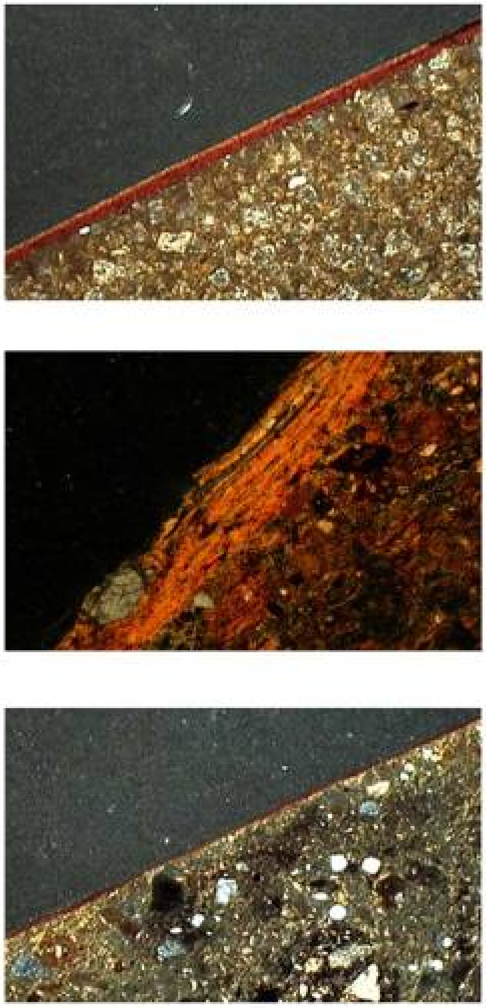


Figure 4. a) Application of a thick layer of slip on a Pahote Punctated: Pahote Variety jar (Sample #12); b) application of multiple layers of slip on an Unnamed Cream-over-red incised plate (Sample #1); c) application of a thin layer of slip on a Laguna Verde Incised: Grooved-incised Variety dish (Sample #16).

specimens and the modern clays provide evidence that local potters exploited particular clay resources located on the site-side of the lagoon to manufacture vessels for local consumption, including finely-made polychrome pots. In this case of Sample #14, this vessel was deposited less than 500 meters from where it might have been originally manufactured.

Discussion and Conclusions

Based on the results of this study, two fairly significant observations can be made with regard to the relationship between the technological and stylistic characteristics of Late Preclassic and Protoclassic vessels. Firstly, thin section analysis has revealed considerable technological variability, even within the small sample of ceramics analyzed here. At Lamanai, we find a general diversity of fabrics (pastes), which vary in terms of the textural properties, the rock and mineral content, the physical properties of the aplastic inclusions and the presence/absence, kinds and combinations of tempering materials they contain. This variation in vessel composition, clearly relates to fundamental differences in the raw material ingredients used and combined to make different Late Preclassic and Protoclassic vessels. Considerable variation in decorative and surface treatment is also evident, as indicated by the different physical characteristics of the slips on individual vessels. Secondly, we find no obvious correlation between vessel composition, surface treatment (based on macroscopic and microscopic characteristics), and form. The obvious implication is that the compositional data cross-cut the type-variety categories. The petrographic analysis was intended to address the following questions.

1. Does the stylistic uniformity of Chicanel Lag pottery correspond to compositional similarities?
2. Do stylistic changes in Protoclassic Zotz pottery correspond to changes in paste and slip technology?
3. Do approaches to paste manufacture with regard to the use of particular clays and tempering materials remain the same as we move from the Late Preclassic to the Protoclassic period?

As this case study demonstrates, the relationship between compositional and stylistic variability among Late Preclassic

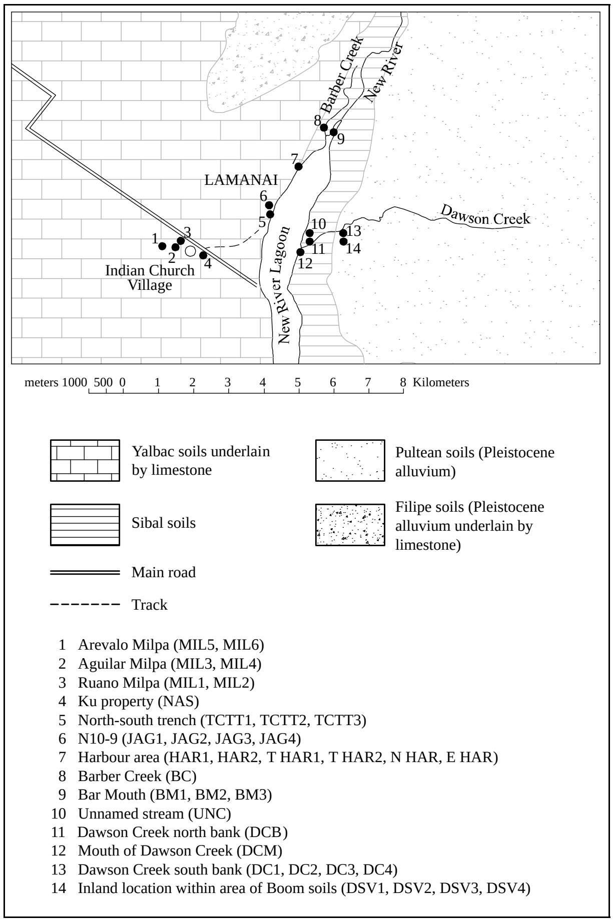


Figure 5. Locations of modern local clays around Lamanai and New River Lagoon.

and Protoclassic vessels at Lamanai is highly complex. A direct relationship between visual appearance, paste technology and provenience, and chronological association is not indicated. Rather, stylistically homogenous *groups* and *types* are highly variable compositionally speaking. In some instances, this variability appears to relate to differences in provenience, whereas in others it may equally relate to chronological differences or other behavioral factors. This is especially true for Lag pottery, which is representative of the Chicanel Ceramic Sphere. The color, form, and surface decoration of Lag pottery are very similar to those found at other sites, indicating that Lamanai participated in a shared ceramic tradition, not only involving other sites in northern Belize but those located in geographically distant areas of the Maya region. Where the similarities among Lag vessels end, however, is with the paste recipes used to manufacture these vessels.

These patterns would seem to be of particular significance when considering that Late Preclassic ceramics have been conventionally characterized as exhibiting a high level of stylistic uniformity, which has been taken to imply technological uniformity. The petrographic analysis of Late Preclassic ceramics at Lamanai has provided evidence that individual potters or groups of potters utilized different paste recipes and, in some cases, slipping techniques, but the color, form, and style of the vessels they produced conformed to some desired societal norm or aesthetic ideal characterized by a specific or standard set of visual attributes. These findings are in general agreement with those of Angelini (1998) for K'axob and Shepard (1956) for San Jose, who have noted that considerable variation exists with regard to the compositional characteristics of slipped vessels during the Late Preclassic period. It is also significant that some of the individual fabrics that occur at Lamanai bear strong mineralogical and compositional similarities to temporally equivalent fabrics described by Angelini (1998) and Shepard (1956), suggesting important connections, petrographically speaking, between some of the Late Preclassic and Protoclassic vessels that occur at these three sites. On the other hand, some of the fabrics at Lamanai are clearly different from anything previously described in the literature, and also the mineralogical and compositional characteristics noted for certain pastes that occur at K'axob and San Jose are completely absent in any of the fabrics analyzed from Lamanai. An important implication that cannot be ignored is that some of the Preclassic to Protoclassic

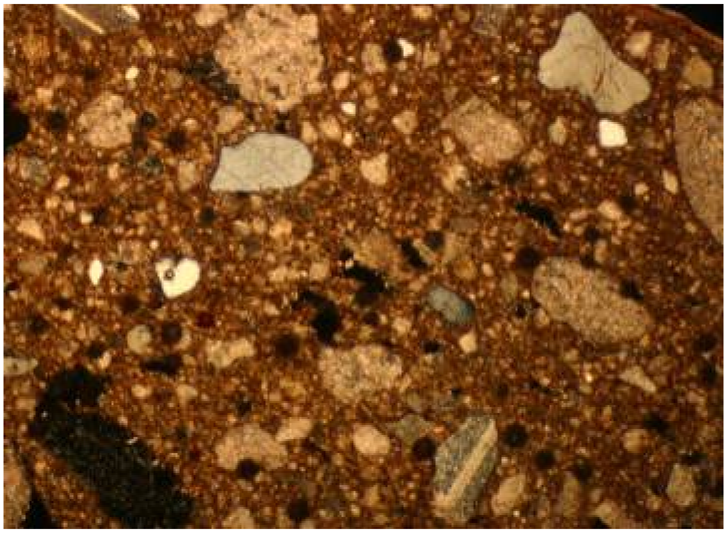


Figure 6. Photomicrograph of a Flor Cream: Indian Church Variety dish (Sample #18)

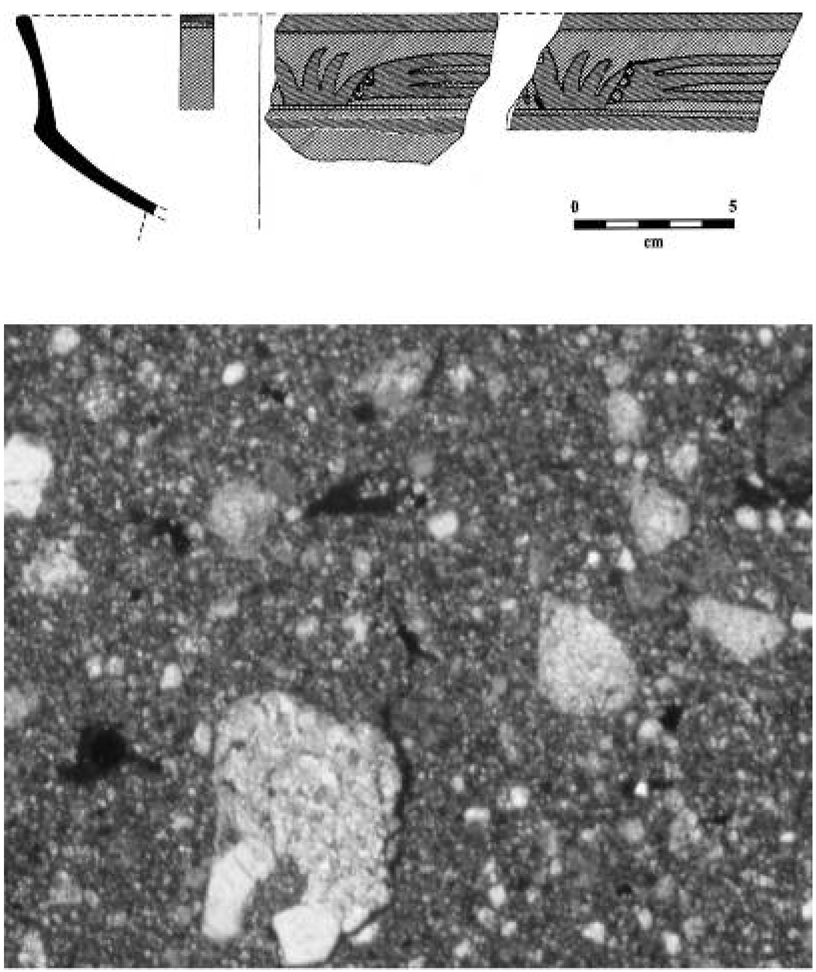


Figure 7. a) Orange-polychrome: Ixcanrio Variety bowl (Sample #14); b) photomicrograph of Orange-polychrome: Ixcanrio Variety bowl (Sample #14).

vessels at Lamanai may have been manufactured at other sites in northern Belize.

When taken together, the results of the Lamanai study are suggestive of a very complex pattern of production and consumption at the community level. Our study documents several different approaches to pot making, even when only considering a very general compositional attribute such as temper type. Within these very general categories, there exists further variation in terms of the specific clays that were combined with particular temper types or temper combinations. In addition, no obvious temporal patterns in vessel composition have emerged. Some of the vessels analyzed clearly derive from local clay resources located on the site side of the lagoon, while others appear to be of non-local origin. The compositional characteristics of most of the 'non-local' vessels suggest a connection to clay resources occurring in north central Belize, specifically between the New River and Rio Hondo (i.e., the general area in which Lamanai, K'axob, and San Jose are located). In addition, one of the vessels can be connected to raw materials that occur at some distance from Lamanai, deriving from clayey deposits associated with areas adjacent to the east and northeast coast. A final observation that can be made with regard to the proveniences of vessels entering Lamanai from other manufacturing areas is that they all derive from localities within northern Belize.

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10 INVESTIGATIONS IN THE BURIED ROYAL RESIDENTIAL COURTYARD AT MINANHA, BELIZE

Gyles Iannone

The ancient Maya center of Minanha is located in the North Vaca Plateau of west-central Belize, in what was once the borderland region between the powerful and antagonistic Caracol and Naranjo polities. For much of its history, Minanha was a small, primarily rural community. During the 8th century, however, it was rapidly transformed into the seat of power for a lesser order city-state. Minanha's period of florescence would, nevertheless, be brief, a fact which is most dramatically expressed in the burial of its royal residential courtyard beneath five meters of rubble sometime during the 9th century. This paper will present the latest data relating to the known architectural features associated with this buried courtyard and also the broader significance of these data with respect to what they tell us about political interaction on the regional scale during the Late Classic (675-810 A.D.) to Terminal Classic (810-900 A.D.) transition.

Introduction

The ancient Maya center of Minanha is located in the north Vaca Plateau of west central Belize (Figure 1). The site was first discovered by a chiclero in 1922 (Versaval 1922), and the British Museum excavated there for six days in 1927 (Gann 1927; Joyce et al. 1927). Trent University's research at Minanha began in 1997, when John Morris of the Department of Archaeology asked us to relocate the site and assess the feasibility of carrying out archaeological investigations there (Iannone 2001). It required three expeditions into the Vaca Plateau to eventually find Minanha. When we were able to rediscover the site, in early May 1998, we quickly realized it that it had a great deal of scholarly potential. For one, it was much larger than we had been led to believe given the 1927 British Museum map. In addition, our exploration of the site epicenter indicated that it contained all of the architectural features expected of a "full-service" civic-ceremonial center. Subsequent reconnaissance in the periphery established the presence of a fairly dense support population and an extensive terrace agricultural system. The many days that we had spent searching for Minanha had also demonstrated that there were few, if any, centers of comparable size and complexity in the north Vaca Plateau. Minanha was therefore deemed to sit at the apex of the local settlement hierarchy. The fact that few "minor centers" were encountered during our reconnaissance also suggested that Minanha was the principal focus for much of the political and economic decision making for this part of the Vaca Plateau.

During our initial considerations of the site, Minanha's spatial location vis à vis some of the major players in Classic period (ca. 250-900 A.D.) power politics emerged as its most intriguing characteristic (Iannone 2001). In political terms, the Belize River region to the north is often considered to have been part of the Naranjo polity, whereas the Vaca Plateau itself is thought to have belonged to the Caracol realm. If this is an accurate characterization, Minanha's location, in the very northern portion of the Vaca Plateau, places it in, or very near, the borderlands between the Naranjo and Caracol polities. That the Vaca Plateau's dramatic rise above the Belize River Valley still constitutes one of the most impressive topographic transitions in the central Maya lowlands provides some corroborative

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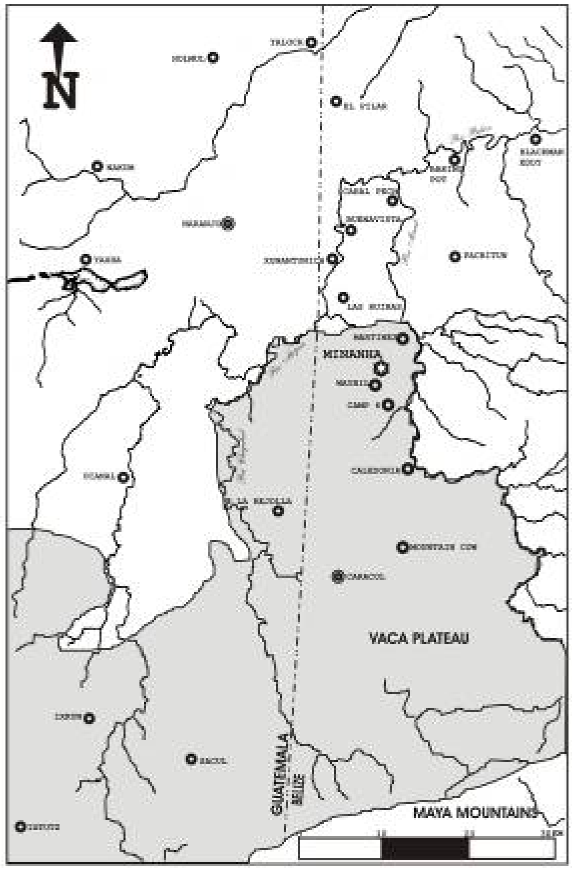

Figure 1. Map of the Vaca Plateau Region showing the location of Minanha and other key centers

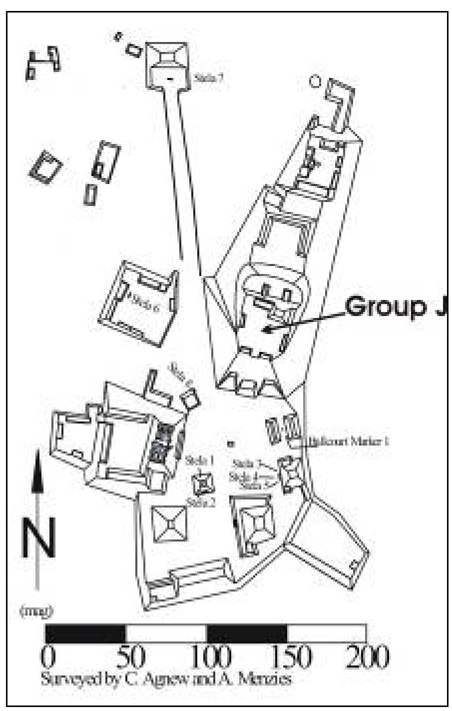

Figure 2. Rectified, isometric plan of the Minanha epicenter

evidence for the existence of this borderland, given the fact that natural features were often used to demarcate political borderlands in ancient Mesoamerica (Hodge 1997:211-212; McAnany 1995:87). Equally meaningful is that Minanha's medial position approximately 25 from the Caracol and Naranjo capitals conforms to the roughly 30 km radius which has been shown cross-culturally to correspond with the territorial extremes of the largest city-states – at least those of the non-hegemonic variety (Charlton and Nichols 1997:7; Hansen 2000:17). In combination, all of the available spatial data suggested to us that Minanha would be an ideal place to establish a project aimed at examining the dynamics of the ancient Maya state.

Excavations in the Minanha Royal Residential Courtyard

Our initial mapping of the Minanha epicenter began in December 1998. Since the summer of 1999 intensive excavations and survey mapping have been conducted throughout the site core and periphery. These investigations indicate that Minanha was initially occupied sometime during the Middle Preclassic (ca. 600-300 B.C.). However, it apparently remained a relatively small community until the mid to late 8th century, when a rapid burst of building activity signifies the emergence of a fully functional royal court. Analysis of the architectural and artifactual data from seven field seasons indicates that the great center of Caracol was a significant source of emulation for the Minanha rulers (Iannone 2005).

The establishment of the Minanha royal court is evinced by the construction of a large court complex on the most prominent hill in the area (Figure 2). The southern portion of the court complex was apparently civic-ceremonial in orientation, comprised as it is of large public plazas and courtyards. This is also the location of the eastern shrine complex, the ballcourt, and Minanha's more administratively orientated range-structures. Eight stelae have been found in association with the court complex, including one made of slate. None of these are carved, although the slate monument may have been, but it was unfortunately broken in antiquity, and its upper portion remains to be found.

The northern portion of the court complex is dominated by a multi-level residential acropolis. The focal point of this acropolis is Group J, which is located at the southern end. This was once home to Minanha's Late Classic royal residential compound. Today, an imposing 18 m high basal platform signifies the past importance of this part of the epicenter. In sharp contrast to the monumental character of this sustaining platform, however, is the rather unimposing terminal courtyard group that currently surmounts it. Specifically, this majestic platform, which is Minanha's most commanding architectural feature, presently supports the remnants of rather mundane, lower status, pole-and-thatch, or possibly wattle-and-daub, buildings dating to the 9th century A.D. From the outset of our research, this anomalous situation provided us with a conundrum which required explanation. The solution to this puzzle was initially suggested by the 1927 British Museum excavation reports, and it was subsequently confirmed by five years of excavations by the Trent University team (2001-2005). It is these excavations that comprise the focus of this paper.

Group J Courtyard Excavations

Our initial readings of the 1927 British Museum reports indicated that the surface architecture of Group J belies what lies beneath. During their expedition, the British Museum team excavated a trench in what they then called "Structure E," a low-lying mound located on the southern side of the courtyard (Gann 1927:147-148; Joyce et

al. 1927:323). Directly below this building platform (35J-1st) they discovered an intact vaulted room (35-2nd) which had been filled with rubble prior to construction of the overlying terminal architecture. A number of the buried building's vault stones were made of slate. Given their short time at the site, they were unable to clear this room to floor level. Nevertheless, they were able to determine that the room itself was 4ft. 8ins. wide, and that it was 4ft. 7ins. from the spring of the arch to the top of the roof.

When we first relocated Minanha, in 1998, one of the first things that confirmed that it was indeed the correct site was the discovery of some of the aforementioned slate capstones. At this time we also noted that looters had dug through the southern half of the eastern building associated with the courtyard (Structure 37J-1st), exposing portions of what appeared to be another vaulted room lying beneath the low-lying terminal architecture. This provided independent confirmation that the architecture associated with the buried penultimate courtyard was much more elaborate, and of higher status orientation, than those features comprising the terminal courtyard group (Figure 3).

Our efforts to examine this buried courtyard in more detail began in 2001, with the excavation of a 4 x 4 m unit in front of the small pyramidal structure located in the northeastern corner of the Group J courtyard (38J-1st). The importance of this structure first came to light during 1922, when a chiclero (someone who taps trees for chewing gum resin) named Eglesias discovered a collapsed burial crypt on its summit (Versaval 1922). Upon examining the crypt Eglesias found five polychrome vessels, one of which possessed a Maya long-count date (Gann 1927:136; Versaval 1922). It was this material that prompted the British Museum to launch their 1927 expedition to Minanha. While there, they excavated a trench down the center of Structure 38J-1st (then called Structure H).

In 2001 the Trent team undertook to uncover the intact base of this structure, with the intent of exposing any ritual offerings that had been deposited beneath the adjacent courtyard surface, and in efforts to expose any architectural features associated with the buried, penultimate, courtyard. These excavations revealed a series of basal steps and a fairly well preserved plaster courtyard surface. Directly below this surface was a dry-stone core fill deposit comprised of boulder-sized materials (≥25.6 cm in longest dimension). To our surprise, as we removed the boulder fill it became clear that the stairs from Structure 38J-1st continued below the terminal courtyard surface, indicating that the upper 3.70 m of a larger pyramidal building associated with the buried penultimate courtyard had been reused during the terminal occupation phase. The actual size of this penultimate building, 38J-2nd would not be established until the following year.

In 2002 we again excavated through the terminal courtyard surface to expose portions of the original pyramidal structure, 38J-2nd. We were able to determine that the lower ca. 4.80 m of this building was buried by the dry-stone core fill deposit that formed the terminal courtyard. Including the portion that was reused during the terminal occupation, the penultimate architecture consisted of a very well preserved pyramidal structure ca. 8.5 m in height. The lower portion of the building consisted of an outset stair. This was separated from an inset upper stair by a wide landing. Excavations to the east and west of the stairs indicated that this pyramidal building exhibited four rounded, and battered, terrace subcomponents. The discovery of stucco fragments in association with this building suggests that it once had a facade. Patches

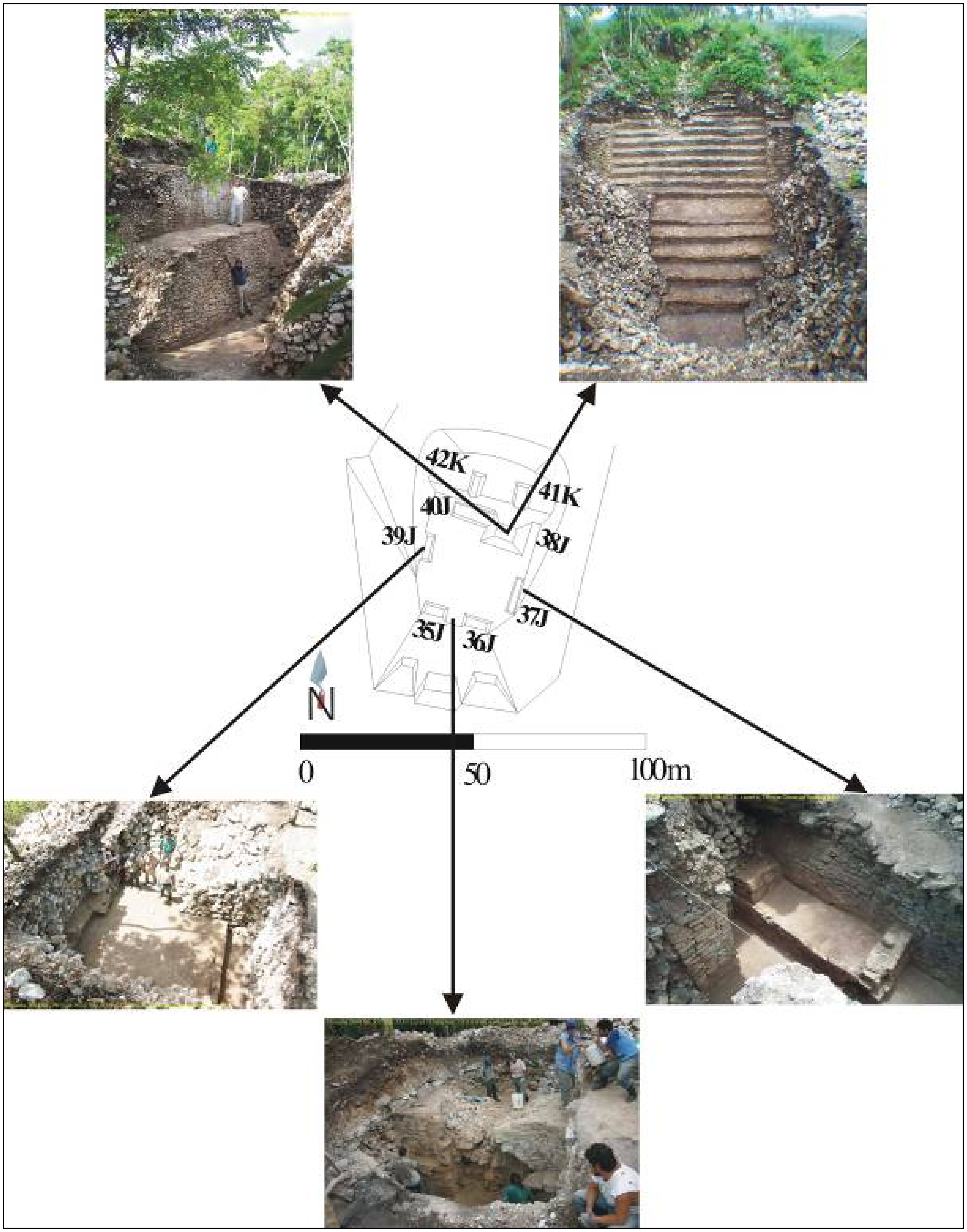

Figure 3. Rectified, isometric plan of Group J, showing features associated with the buried royal residential courtyard

of burning were located along the primary axis of the building, at the base of the 38J-2nd stairs. Because this burning was of low intensity, and was restricted in its distribution, it is possible that it constitutes evidence for censer burning rituals.

In 2002 we were also able to conduct excavations on the eastern side of the courtyard, in association with Structure 37J-2nd, the buried penultimate building that had been partially exposed by looting activity. Through these excavations we were able to uncover the southern half of a once vaulted room. Bits of plaster were observed on the walls, and its original red and blue coloring could still be seen. In terms of the room plan, an axially aligned doorway was located on the west side of the room. This appears to have been the only doorway in the building. Directly across from the doorway was a centrally located masonry bench with side-arms. The bench was only attached to the room on its backside. Given its characteristics, this bench can be interpreted as a "throne," following the recent arguments made by Chase and Chase (2001:109), Harrison (2001:86) and Valdés (2001:150). As Valdés summarizes, thrones are often located "in front of the central access door to the edifice, so that the sovereign seated there could be seen by the spectators gathered in front of the palace." Remnants of painted plaster indicate that this throne was once painted red. On the inside wall, directly in front of the northern portion of the throne, three cord-holders were identified. They were well fashioned, thickly plastered, and likely represent the remains of a perishable room divider that would have restricted the view of the northern half of the room.

The southern end of the room had multi-tiered benches. It is assumed that, with the exception of the ability to close it off with the perishable room divider, the northern half of the room is a mirror image of the southern half (a portion of the first of two multi-tiered bench surfaces was found adjacent to the northern end of the throne). The benches themselves are not of the traditional "sleeping variety," and their location to the side of the throne would have meant that they would have also been oddly placed for granting audiences. However, they would have been quite useful for storing ritual paraphernalia and conferring with advisors. It is also plausible, however, that the northern half of the room did indeed serve as semi-private sleeping area for the ruling family, given the ability to close it off through the use of the aforementioned room divider. Given the small size of the room, and its bench arrangement, those seeking audiences with the ruler would have been required to kneel outside of the door of the building, on the upper step of the building platform. During excavations the first step down from this room was encountered immediately outside the doorway. It is believed that this step is the first of a four or five step stair that lead down to the courtyard.

Interestingly, our excavations indicated that the room had been swept clean prior to burying it, and we found no evidence for termination rituals. Equally intriguing was the room fill stratigraphy, which suggested that 37J-2nd had been filled from the inside, almost to the level of the terminal courtyard surface, and only then was its roof vault partially collapsed. This implies that whoever carried out the infilling event had originally attempted to bury the room intact.

In 2003 we returned to Group J, and opened a large excavation to the immediate west of the 38J-1st pyramidal structure. Beneath a low-lying building platform (40J-1st) associated with the terminal occupation, we uncovered the rounded, and battered, terrace subcomponents of the buried 38J-2nd pyramidal building which dominated

this side of the courtyard during the penultimate construction phase. These excavations also indicated that when it was in use, access between the buried royal residential courtyard and the adjacent Group K would have been unfettered. Group K's vernacular architecture, domestic artifact inventory, and spatial location, all suggest that it served as a multi-faceted servant's area for the royal family (Slim 2005). It was thus an integral part of the penultimate royal residential compound. During the terminal occupation, however, access to Group K was restricted, and it likely fell into disuse.

During the 2004 field season we shifted our attention to the western and southern portions of Group J. On the southern side of the courtyard the terminal architecture (Structure 35J-1st) consisted of a partially looted tandem range-structure. The northern gallery of rooms was constructed of double-faced masonry basal walls with perishable upper walls and roofing. Excavations beneath the central rooms of this building exposed portions of a formal, vaulted entranceway that would have led into the royal residential courtyard during the penultimate occupation (35J-2nd). This was the same buried building that had been discovered by the British Museum in 1927. Due to the small size of our excavation unit (6 x 4 m), and the unstable, loose fill, we were unable to reach the floor of the passageway. Nevertheless, our excavations, combined with those of the British Museum expedition, provide us with enough data to characterize this architectural feature.

The doorways for this building were ca 2.00 m wide (E-W), and the passageway itself was ca. 3.10 m long (N-S). Narrow rooms (ca. 1.48 cm wide), or possibly secondary passageways, lead off of the main entranceway to the east and west. For safety reasons (i.e., the vaulting had shifted and begun to collapse inward sometime in the past), we were unable to probe these rooms/passageways. However, the British Museum's earlier excavations indicated that the capstones for the building were intact, suggesting that rather than collapsing the vault as part of the construction of the terminal courtyard – which is the common practice, the individuals responsible for the burial of the royal residential courtyard at Minanha filled this building with "loose rubble and limestone dust" from the inside prior to burial of both it, and its associated courtyard (Gann 1927:147). As noted earlier, this same labor intensive, yet careful, infilling practice is also evident in the case of the buried 37J-2nd throne room.

Due to the nature of the courtyard burial process, the building itself was in an excellent state of preservation (with the exception of the minor vault collapse discussed above). Some sections of plaster still adhered to the outer walls, which were constructed of well fashioned cut-stones. The southern and northern facings of the building were adorned with ca. 40 cm thick medial mouldings. The medial corbels correspond with the vault spring line in the interior of the building. Interestingly, a small, squat, olla-shaped vessel, a 10 cm long obsidian chipped stone blade, and a 16 cm long chert chipped stone thin biface, were discovered in the Level 3i (see below) terminal courtyard fill, just below the medial moulding, along the 35J-2nd primary axis. It seems plausible that these three items were originally deposited together as a cache on top of the medial moulding of 35J-2nd at the outset of the terminal courtyard filling event (the obsidian blade and biface having been placed inside of the ceramic vessel). At some point following their placement, either during the final stages of the infilling, or later on, when the vault shifted and began to collapse, these items came to rest in their position of discovery.

Finally, in 2004 we were also able to expose portions of the buried penultimate architecture situated on the western side of the royal residential courtyard. The terminal architecture at this locus consisted of a partially looted, low-lying building platform (39J-1st). Excavations below this building exposed sections of a large, very well preserved, two-tiered platform (39J-2nd). Due to the instability of the ca. 2.00 m of dry-stone fill that overlay 39J-2nd, and the need to maintain a ramp in the northeast corner of the unit to remove the aforementioned fill materials, we were unable to take the entire excavation unit down to the penultimate architecture in 2004. Nevertheless, we were able to open up a large enough area to get a sense of the size and grandeur of this building platform. The 9 cm thick plaster surface of this platform was incredibly well preserved, and large sections of red paint were encountered across the floor and on the plastered faces of the platform terrace subcomponents. Closer examination of these painted areas indicated that the red pigment included gray, metallic crystals, confirming that it was made from crushed specular hematite. The red paint was particularly well preserved beneath those areas that were initially covered with thick, sticky, gray, clay prior to deposition of the larger, dry-stone fill materials.

In the eastern half of the unit our excavations exposed sections of three platform terrace subcomponents. Due to its proximity to the eastern wall of the unit, we were unable to completely expose the third (lower) terrace. If, however, the rise and run of these terraces remained fairly consistent (i.e., 0.56 m rise and 0.84 m run), four terraces in total would have been required to reach the known penultimate courtyard surface. These data suggest that the 39J-2nd basal platform was originally ca. 2.00 m high. As was the case in other structures associated with the buried courtyard, this platform was swept clean before being covered by the terminal construction fill.

Along the western extreme of the 2004 excavation unit we encountered some additional architectural components. Specifically, roughly 4.00 m west of the frontal terracing, a moderately well preserved inset step was discovered. Adjacent to this step, to the north, was a line of cut-stones ranging from one to two courses in height. In 2005 we returned to examine these features further via a large unit located to the west of the 2004 excavations. These investigations indicated that the inset step and line of cut-stones were components of a smaller (ca. 0.40 cm high) upper platform that surmounted the larger, basal platform exposed in 2004. This upper platform had been partially dismantled/damaged as part of the Terminal Classic burial of 39J-2nd. In summary, the 2004 and 2005 excavations in association with 39J-2nd indicate that, during the tenure of Minanha's royal court, the west side of the royal residential courtyard was dominated by a large, two-tiered, platform that likely served as a setting for performances and rituals for the Minanha elite.

Summary of Group J Excavations

In summary, our excavation below the mundane terminal architecture that currently comprises Group J indicates that an ostentatious royal residential compound existed at this locus during the Late Classic period. This complex would have been the focal point for the 8th century Minanha royal court. Its subsequent burial therefore suggests that a significant political disruption occurred at Minanha sometime during the 9th century. The filling event itself was a well planned and complex endeavor, and it therefore tells us much about the final days of royal rule at Minanha. In all cases, prior to depositing the

mass of dry-stone fill that covered the courtyard and its buildings, the courtyard, platform, stair, and room surfaces were all swept clean, and a ca. 10-20 cm thick lens of finely sorted sediments was laid down. A layer of boulder-sized limestone slabs was then carefully deposited on all surfaces to protect them from the overburden of fill that would cover the courtyard. This fill was contained within well fashioned construction pens. With the exception of the two-tiered platform on the west side of the courtyard (39J-2nd), an effort was made to bury the buildings intact, which meant that, in the case of vaulted buildings, an extreme amount of labor was required to haul stones through narrow doorways and subsequently stack them to the roofs of each room. Obviously, this is an arduous process when compared to collapsing vaults and filling buildings from the outside. In the end, the care and labor investment associated with the burial of the Late Classic royal residential courtyard seems at odds with the rather plain Terminal Classic architecture that was constructed following the filling event. This contradiction will be addressed in the following discussion.

Discussion and Conclusions

Given all the data acquired during our excavations in Minanha's buried royal residential courtyard, it is clear that any interpretation of the events surrounding the rise and fall of Minanha's Late Classic royal court must explain the following: 1) the rapid growth of this royal court, and its level of architectural elaboration, suggest that its founders had the political and economic resources to very quickly create a legitimate setting for a seat of power; 2) there is no evidence to suggest that the pre-existing local community had the means or the wither all to establish this royal court independently; 3) the agents that founded the royal court had a detailed knowledge of statecraft as it was practiced at Caracol; 4) whoever sponsored the filling of the Late Classic royal residential compound had the resources to carry out this monumental feat; 5) whoever enacted the filling event took great care in burying the courtyard virtually intact; and, 6) there is no evidence for construction of another royal residential courtyard at Minanha after the filling event.

In terms of the rise of the court, the 8th century itself has been characterized as a period of decentralization in which subordinate lords accrued greater powers and figured more prominently in political affairs (e.g., Culbert 1991:325; Fash 1991; Fash and Stuart 1991:172; Iannone 1995; Schele 1991a:78, 1991b; Stuart 1993:332, 336, 349). Powerful centers such as Caracol and Naranjo were clearly affected by this changing sociopolitical landscape. Caracol erected only one inscribed monument between 680-798 A.D. (Martin and Grube 2000:95), and Naranjo produced only one monument (Stela 20 – 746 A.D.) between 726-780 A.D. (Martin and Grube 2000:78-79). This data implies that Minanha's royal court came to prominence during a period of regional balkanization. These circumstances, considered alongside the significant level of Caracol's emulation present at the site, suggest that the emergence of Minanha's royal court may have been the result a splinter group of disaffected Caracol nobles seizing the opportunity provided by the changing political circumstances of the 8th century to found, in conjunction with established local leaders, an independent royal court in the borderlands between Caracol and Naranjo (Iannone 2005; see also Kopytoff's 1987, 1999).

In terms of the demise of the Minanha royal court, this can be partially explained by the return of both Caracol and Naranjo to the political stage at the end of the 8th century. It is plausible that Minanha's claim to legitimacy as a seat of

power for an autonomous city-state was rejected by these more established royal dynasties. Minanha's location in the borderlands between Caracol and Naranjo may have also contributed to it demise. Specifically, the epigraphic record tells us that when Caracol and Naranjo reentered the arena of regional politics at the end of the 8th century, they moved very quickly to restore their old territories. This involved both centers undertaking military campaigns and/or initiating diplomatic missions within their borderlands, at places such as B'ital, Ucanal (A. Chase 2004:330; Martin and Grube 2000; cf. Laporte 2004:228-229), and presumably Minanha (Iannone 2005). Either one of these centers would have had the political clout to remove the Minanha ruling family, and the available resources to sponsor the courtyard burial event. It seems highly unlikely that the local population would have had the means or the intent to do the same. Nevertheless, the care taken to fill the courtyard does suggest that local agents may have been involved in the actual task of courtyard burial. Although it is nearly impossible to determine past motivations in archaeology, it is intriguing to think that by burying the courtyard and its associated buildings virtually intact, the people who were charged with filling the Late Classic royal residential compound were at least partially striving to "cache" the most visible, and symbolic, component of their once powerful city-state.

In closing, it should be noted that the purposeful burial of the Minanha courtyard also fits a more general pattern recognized at other centers in the Maya lowlands, wherein the filling of elite residences *prior to actual site abandonment* occurred as part of the Terminal Classic collapse sequence. This has been documented at a number of other centers, including Xunantunich (LeCount et al. 2002:44), La Milpa (Hammond 1999a:13, 1999b; Hammond and Thomas 1999), and Lamanai (Graham 2003). These filling events suggest that one of the first consequences of the infamous Maya "collapse" was often the effacement of both the physical and social ruling "houses" of many lowland centers (Iannone 2005). Interestingly, Stela 11 at Copan, the latest monument at the site, may refer to just such an obliteration of a "founder's house" (Martin and Grube 2000:212; Stuart 1993:344-346), an event which has also been interpreted by David Stuart (1993:346) as a possible metaphorical reference to the end of Copan's ruling line. Our excavations in the buried Minanha royal residential compound provides another example of a ruling "house" being obliterated – both literally and figuratively – at the very outset of the "collapse" sequence. Such events require greater consideration, because they suggest that the collapse itself may have had a punctuated quality that has yet to be fully incorporated into our model building.

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11 EXCAVATIONS OF AGRICULTURAL TERRACES AT CHAN BELIZE: RESULTS OF THE 2004 SEASON

Andrew R. Wyatt

Excavations on agricultural terraces at the Chan site in the Belize River Valley have revealed new information regarding ancient Maya agriculture. An earlier date for the construction of these intensive agricultural strategies than previously established, as well as evidence of irrigation and other hydraulic features suggests that our models of Maya agriculture need to be refined through extensive excavation and the recovery of empirical data. This new data indicates that agricultural terraces were constructed independent of the population increase in the Late Classic and were constructed without the input of external influence from larger, nearby sites.

Introduction

Studies of ancient Maya intensive agriculture have transformed our understanding of the Pre-Columbian past in the last 30 years (Fedick 1996a; Flannery 1982; Harrison and Turner 1978). Despite early data suggesting widely used intensive technologies (Lundell 1940; Ower 1927), early researchers often uncritically used ethnographic analogy to suggest that the ancient Maya practiced primarily slash-and-burn agriculture (e.g. Thompson 1954). In the past several decades, archaeologists began collecting data on ancient Maya agricultural regimes and were able to show that the ancient Maya used a variety of intensive agricultural strategies, including raised fields, wetland agriculture, and terraces (Adams 1982; Dunning and Beach 1994; Fedick 1994; Healy et al. 1983; Matheny 1978; Pohl 1990; Scarborough 1983; Siemens and Puleston 1972; Turner 1983; Turner and Harrison 1983).

Initial research efforts were aimed to define the nature of ancient intensive agricultural technologies and thus concentrated on surveying proposed agricultural fields (e.g. Siemens and Puleston 1972), or on testing agricultural constructions to determine general chronologies and basic construction methods (e.g. Turner 1983; Turner and Harrison 1983). These studies altered our perceptions of the Pre-Columbian landscape by discarding the simpler and ethnographically based views of Maya agriculture, and supplanting these with archaeologically based studies. Given the diversity of ancient agricultural practices now known to exist in Maya society, the most recent research is calling for more detailed, socially and contextually-focused studies of agricultural technologies both to fully understand the techniques and methods of ancient Maya intensive agriculture and to place this technology within the context of ancient Maya society (Fedick 1996b, Dunning 1994).

This paper provides a summary of the 2004 excavations on the agricultural terraces at the Chan site in the Belize River Valley. The research at Chan aims to provide both a general chronology and construction sequence of the agricultural terraces and associated structures, as well as to address questions of economic organization. Utilizing comparative data from excavations in the Chan site core and outlying settlements, this project will illuminate the role of the farmer within the Chan site, as well as how they interacted with the greater political economy of the

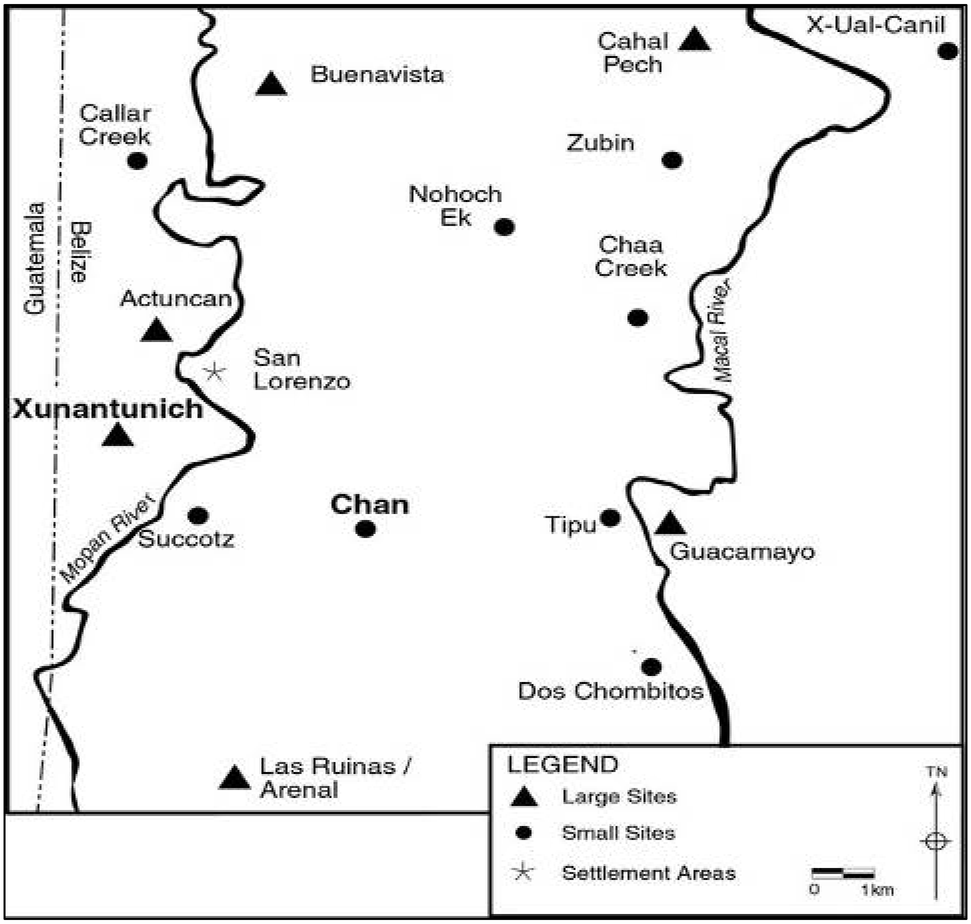

Figure 1. Location of Chan Site.

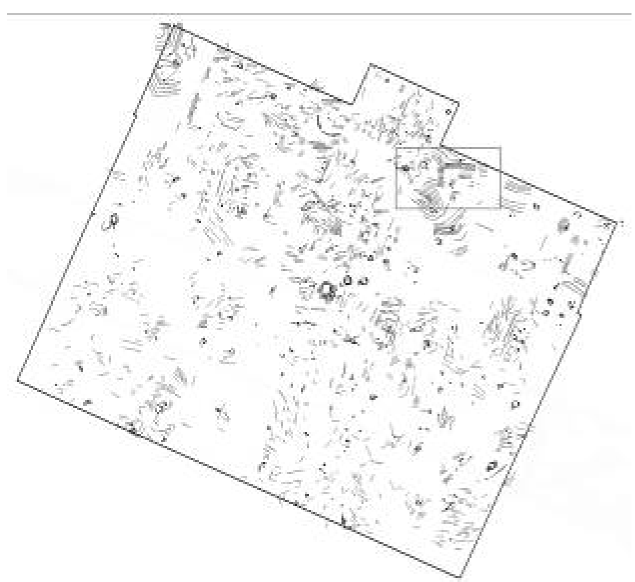

Figure 2. Terracing to the north of the site center**.**

Belize River Valley. However, the data from the excavations is primarily unsynthesized, so while this paper provides several basic conclusions, an in-depth analysis of the role of the farmer in the Maya political economy will be forthcoming.

The Chan Site

The Classic Maya site of Chan (fig. 1) is a small, ancient Maya-farming village located approximately 4 km southeast of Xunantunich in the Belize River Valley in Western Belize (Robin, et. al. 2002). The gently rolling hills, rich soils, and fertile flood plains of the Belize River Valley - extending in some areas up to 1km from the course of the Belize River – have generated an environment suited to agriculture. There have been a number of different agricultural adaptations to this riverine environment in western Belize; the most documented being the raised and ditched fields along the Rio Hondo to the north. The western Belize River Valley, lying within the foothills of the Maya Mountains, is a hilly environment and provides an excellent environment for agricultural terrace construction. Indeed, this area contains one of the highest regional densities of agricultural terraces in the Maya area (Wyatt and Kalosky 2003).

Although the Chan site was continuously occupied from the Middle Preclassic to the Early Postclassic periods (ca. 900 B.C. – 1200 A.D.), it was a relatively small site throughout most of its settlement history with only 10-20% of its households occupied in all periods except for the latter part of the Late Classic (A.D. 670-780) when its occupation increases dramatically to 75-80% (Wyatt and Kalosky 2003). This increase corresponds to the political florescence of the nearby center of Xunantunich located 4km to the northwest of Chan. During the short-lived period of Xunantunich political expansion in the latter part of the Late Classic, Chan's residents were incorporated into the Xunantunich polity economic network, as indicated by ceramic distribution patterns at Xunantunich, Chan, and other sites within this political sphere (LeCount, et al. 2002; Robin 1999).

Contour terraces are the most widespread type of agricultural construction at Chan with over 89% of the total. This type of terrace transforms a hillside into a series of stepped, level planting surfaces, and also for erosion control and water management capacities (Donkin 1979:32). Many of the contour terraces at Chan are exceptionally well preserved and exhibit a wide variety of sizes and locations. Terrace walls range in height from less than 50cm to over 2m which corresponds to hill slopes of very gentle grades of 5° to steep grades of 35°. Contour terraces are often found adjacent to large household structures as well as away from any visible house mounds.

Cross-channel terraces make up 2% of the total number of terraces at Chan. Cross-channel terraces are made up of a series of steps built horizontally across a seasonally inundated channel or gully, trapping sediments and providing very rich soils (Donkin 1979: 32). Due to the accumulative nature of cross-channel terraces, their walls are often quite high, with some at Chan as much as 3.5m in height. Although making up only a small percentage of the total number of terraces, their size often make them a prominent feature of the landscape where they are found. Cross-channel terraces are different in terms of construction and maintenance as compared to contour terraces (Dunning and Beach 1994; Fedick 1994), yet at Chan we find these two types of terraces adjacent to and even connected to one another. This

suggests that our models of terraces and the organization needed to construct and maintain them are incomplete.

Previous Research at Chan

Initial work at the Chan site was carried out in 1996 at a cluster of farmsteads lying to the south of the site center (Robin 1999). In 2002 and 2003, a survey of the entire Chan site, an area encompassing 1 km^2 surrounding the site core (defined using nearest-neighbor analysis [Ashmore et. al. 1994]) was completed. This survey documented a concentration of terraces greater than any found in the Belize River Valley (304 km^2 [Wyatt and Kalosky 2003]).

Excavations funded by a grant from the Foundation for the Advancement of Mesoamerican Studies, Inc.(FAMSI), in 2004 were undertaken in an area of particularly dense terracing to the north of the site center (fig 2). These excavations exposed significant areas of terrace bed surfaces and terrace walls and focused on a large, solitary mound located on the terraced hillside (Wyatt 2004). Excavations illustrated a contiguous construction of terrace and structure walls, thereby making it possible to propose dates for terrace construction based on the building history of the associated household structure. Also, careful excavation of terrace wall fill provided dates for the construction of terraces located away from the structure. Preliminary ceramic analysis indicates that both the structure and the terraces at Chan date to the Late Terminal Formative/Early Classic period, based upon the presence of waxy slips and identifiable vessel forms (LeCount personal communication).

Results of Excavations

Excavations were carried out in four different locations; Site A, Site B, Site C, and Site D (fig 3). Site A excavations were centered on structure C-304 and Sites B and C were located approximately 25m from the structure. Site D is actually several small depressions clustered nearby each other that we believed were human modified features.

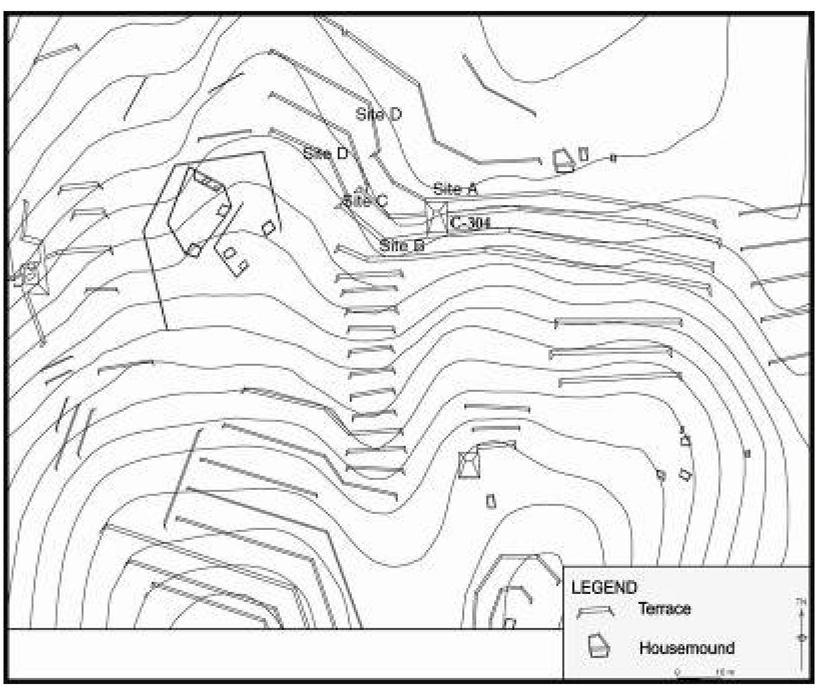

Figure 3. Site A excavations around structure C-304 and Site B.

Site A

Excavations at structure C-304 (the large hillside mound) revealed a complex series of constructions episodes ending in a Late to Terminal Classic (A.D. 600-900) household (Wyatt 2004). This structure is somewhat unusual in that it is a fairly large structure (3m in height on the north side) with a long history, yet exists without any adjacent structures; single mounds are not unusual in this area, but it is rare for them to be this size and to have multiple construction episodes. The structure also sits on a hillside connected to several terrace walls and most likely served as a focal point for agricultural activities. However, the truly unique nature of this structure is in its earliest incarnation as a "springhouse".

Excavations on the terrace beds and terrace walls adjacent to the structure on the east revealed a natural spring (now dry) emanating from the side of the hill near the southeast corner of the structure (fig 4). The spring was diverted to the agricultural terraces as well as into and through the earliest construction of the structure. Bedrock was cut and stones were set in place to guide the spring from its origin through a small opening in the wall of the structure at the far southeast corner. Once inside the structure, the water was guided through the interior and was collected in a small pool or basin created by the placement of large stone blocks. This basin also had a small spillway that would guide the excess water away from the structure.

While the exact function of this structure is unclear, its focus was certainly the collection and maintenance of spring water. Whether it was to create a climate-controlled food storage facility or to collect water for drinking (or, most likely, both) it represents an extensive knowledge and use of the hydrology in this locale. Interestingly, indicators of a ritual function for the springhouse are, for the most part, absent. No burials were found associated with the structure, and no ritual paraphernalia were found beyond an offering at the rear of the structure where the water entered, and an offering in the wall adjacent to the water basin. Therefore,

Figure 4. Natural spring location near the southeast corner of the structure C-304

while water holds an important position in the ritual life of the ancient Maya (Scarborough 2004), this particular facility appears to be primarily functional.

The spring also served to irrigate the terrace beds adjacent to the structure as well. A natural sluice gate carved into the bedrock just below the source of the spring guided water through the terrace wall and the terrace bed. Underneath the ultimate terrace wall construction at the southeast corner of the structure were three small stone walls following a 50° NE angle, the angle of the natural uplift of the bedrock. These angled walls most likely guided the spring water to the terrace bed below after passing through the sluice gate. The spring therefore served a dual purpose, to irrigate the nearby terraces, and to supply water for the springhouse.

However, at some point the spring either dried up completely, or failed to provide enough water to warrant the continued maintenance of a springhouse. Later construction episodes filled in the interior channels and basin of the springhouse, and the exterior channels were filled in as well. A later terrace wall was then constructed over the angled walls.

These later constructions continued to serve an agricultural purpose however. The structure was located on the hillside, and physically connected to the contour terrace walls of the earliest constructions. This is in contrast to the more common household groups located at the base of hills or on a plateau. A total of 22 general utility bifaces were also recovered throughout the excavations in the structure, either in fill or in middens (fig 5). Made of limestone or poor-quality chert, the size and form of these implements suggest an agricultural function, similar to a modern-day hoe. This structure therefore has served both an agricultural purpose as well as a water management function.

Figure 5. Utility bifaces recovered in fill and in middens of structure.

Site B

A trench excavated through two cross-channel terrace walls and three terrace beds at site B revealed unique construction techniques as well as evidence of an earlier terrace wall on the terrace bed. The majority of terrace walls excavated in Mesoamerica consist primarily of a vertical facing wall of large stones or cut blocks with small fill piled behind the wall to facilitate drainage. Occasionally, walls were constructed of two vertical walls of large stones with fill in between (this is the construction of the terrace wall at the northeast corner of structure C-304). While this form of terrace construction maximizes the planting surface on the terrace bed, it also requires a great deal of time spent on maintenance of the wall. During periods of high rainfall, hydrostatic pressure builds up and sections of the wall collapsed.

Figure 6. Excavation profile of terrace wall of Site B.

The terrace walls at site B, however, were constructed with smaller stones, with the walls at a 45^{o}degree angle to the planting surface (fig 6). The excavation profile showing stones with quite a bit of soil mixed

in indicates that these walls were most likely built accretionally over time with more stones piled against the wall as soil continued to accumulate through alluvial processes. Unlike the terraces at large sites such as Caracol (Healy 1983; Chase and Chase 1998), which were built with large vertical stones, the Chan cross-channel terraces resemble terrace construction associated with smaller households (Donkin 1979; Smith and Price 1994).

Figure 7. Ephemeral remains of an earlier terrace wall found on the terrace bed below the soil surface

The angled terrace wall would also save on maintenance, as the wall would be less likely to collapse during periods of heavy rainfall. The 45^{o} degree angle would serve as a buttress and create a much stronger wall. While not as aesthetically pleasing as a cut stone wall, such as one might want in the elite center of a city, the construction of angled terrace walls utilizing smaller stones is more functional and less time-consuming to maintain.

Finally, ephemeral remains of an earlier terrace wall were found on the terrace bed below the soil surface (fig. 7). This early wall consists of a line of stones one course high sitting directly on bedrock. The wall is very fragmentary, but excavations in the area uncovered no artifacts suggesting its role as a household or other occupied structure. Likely, it is the remains of a terrace wall that was abandoned and buried by the buildup of soil behind the more recent terrace wall. This early terrace wall provides further evidence of the longevity of occupation and use of agricultural terraces at this site.

Figure 8. An irrigation/drainage channel running across the terrace bed

Site C

Excavations in this location were begun at the corner of two terrace walls, revealing an irrigation/drainage channel running across the terrace bed (fig 8). At the corner, a series of stones were set in place to guide water down the wall of the terrace, and onto the terrace bed. From that point, a channel was created alternately with stones, cut bedrock, and natural bedrock features. Similar to the spring water channel at site A, this channel ran at a 50^{o} degree angle northeast, again utilizing the natural topography.

Originally we suspected that this was simply a channel to drain excess water, a necessity during the rainy season. However, a small pile of stones was placed directly in the channel at two points, resembling a

water distribution system utilized by terrace farmers in Switzerland (Netting 1993: 36). In this system, water is released from a reservoir located farther up the hill and allowed to drain down a channel. At various points, a barrier is placed in the channel, causing the water to pool and spread across the terrace bed, providing water for crops. A large series of reservoirs are located above the terraces on a plateau, possibly providing a water source for this particular irrigation channel.

These excavations demonstrate the utility of small-scale irrigation of agricultural terraces in the Maya Lowlands. Much of the irrigation projects throughout Mesoamerica consist of large-scale public works projects such as the chinampas outside Tenochtitlan and the raised fields in Pulltrouser Swamp. What this demonstrates is that small-scale farmers could and did create and maintain intensive agricultural systems away from centralized control. Scarborough (2004) shows how the Tikal elite controlled access to water for a large area surrounding the site core. In the hinterlands, however, similar systems were constructed and maintained by a non-elite farming populace.

Figure 9. Aguadita of Site D.

Site D

Site D is not one specific location, but refers to three excavations undertaken in what we have termed "aguaditas" (fig 9), very small depressions visible on the surface, often no more than 2 meters in diameter, and less than a meter deep. Originally we thought these were simply depressions created by tree fall, but closer inspection revealed they lacked the normal mound of dirt created by the uplifted roots on one side. Excavations revealed that of the three aguaditas excavated, two are unequivocally human made structures with the third most likely an aguadita, (but not conclusively determined). We have called them aguaditas because we believe they were small water reservoirs for practicing "pot irrigation"; which is the filling of small containers with water and watering plants by hand.

Discussion and Conclusions

Preliminary analyses of the excavations of the agricultural terraces at Chan illuminate several important aspects of ancient Maya agriculture as practiced by farmers in the hinterlands. First of all, the structure and terraces in this area show a lengthy occupation. The structure located on the terraces shows at least five different construction episodes, with final abandonment occurring during the Late to Terminal Classic, and the earliest construction of the springhouse built by the Late Formative/Early Classic period (Wyatt 2004). The structure has always been associated with the hill slope agricultural terraces, as demonstrated by the simultaneous use of the spring as feeding the basin in the springhouse as well as irrigating the terrace beds nearby. As the structure was rebuilt, the terraces were also rebuilt to accommodate the remodeling of the house mound. The nearby terrace transect also

reveals multiple construction episodes in the terrace walls through the partial dismantling of an earlier wall construction located on the later terrace bed. Recently completed ceramic analysis of the artifacts from this site and other terraced locations throughout the Chan site unequivocally show an occupation and terrace construction by the Late Formative/Early Classic, demonstrating agricultural intensification prior to the dramatic increase in population seen in the Late Classic.

Since the discovery of the wide variety of intensive agricultural practices utilized by the ancient Maya, scholars have tended to view them through the theories of population pressure first proposed by Ester Boserup (1965). Briefly, her theory posited that agricultural intensification could be seen as a response to an increase in population by placing greater demands on the land to produce food for more people. Boserup theories have been utilized extensively by Maya archaeologists, because it was a means to escape the notion that the tropical environment sets limits on agricultural productivity, as well as to explain the large population growth in the Late Classic (Harris 1978; Sanders 1972, 1973; Turner 1974; 1978). However, despite a reevaluation of her theories in other parts of the world, it has for the most part, remained uncritically accepted here. Nevertheless, raised and canalized fields located in Northwestern Belize dating to the Preclassic (Turner and Harrison 1983), as well as the terraces at Chan, indicate that all intensive agriculture was not necessarily associated with the Late Classic. The farmers at Chan, therefore, constructed agricultural terraces without the apparent impetus of population pressure.

What, then, caused them to expend the effort to create these terraces? One possibility may have been the need to create more food for larger nearby centers, such as Xunantunich. Another possibility may be that constructing and maintaining these agricultural terraces was not necessarily perceived as a greater expenditure of labor than swidden agriculture. Terrace construction at Chan indicates an accretional process, rather than a temporally concentrated effort such as a major irrigation work and these patterns is also reflected in agricultural terraces in other parts of the world (Anderson 1985; Donkin 1979; Kirch 1994; Sandor et al. 1990; Smith and Price 1994). The style of terrace construction also suggests that maintenance may have been kept at a minimum due to the greater durability of the 45° angled walls. Given that clearing forests for swidden agriculture would have been accomplished with stone tools, the Chan farmers may have concluded that the slow construction and upkeep of the terraces was less labor intensive than clearing a patch of forest every several years.

As Smith and Price (1994) demonstrate in their work on agricultural terraces in Aztec period Morelos, agricultural intensification in the form of terraces can occur at the household level, rather than at a larger, state-wide level. This, I believe, is precisely what the farmers at Chan did. The slow, accretional construction process and the knowledge of the landscape indicate a household (or at least community) level of intensification. The distance from any large centers at the time of initial construction of the terraces also suggest that whatever was the stimulus to creating the agricultural terraces was most likely an inside process rather an influence exterior to the community. This suggestion corresponds to the relatively decentralized nature of the Maya region in general.

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12 A SUMMARY OF THE 1999–2002 SEASONS OF ARCHAEOLOGICAL INVESTIGATIONS AT POOK'S HILL, CAYO DISTRICT, BELIZE

Christophe G.B. Helmke

The following is a synopsis of the 1999 through 2002 seasons of archaeological investigations conducted at the site of Pook's Hill. The site's location and description precede an outline of the research objectives that have guided the investigations. Results of the first four seasons of investigations are provided thereafter in summary form. Provisional analyses focus in particular on the special deposits (burials and caches), the archaeological deposits ('terminal occupation debris' and 'lenses'), the architecture (eastern shrine and sweatbath) and the fragmentary hieroglyphic texts discovered. Our investigations have revealed that there is a notable diachronic and spatial patterning in ritual practices at Pook's Hill, as reflected in the material precipitates of such actions. Further study should offer insight into whether local and idiosyncratic patterns are manifest, or if it reflects wider Late to Terminal Classic social processes in central Belize and the eastern Maya Lowlands generally.

Introduction

Four seasons of excavations were conducted at the site of Pook's Hill, Belize, between 1999 and 2002. The site of Pook's Hill is located in the Roaring Creek Valley, in Cayo District, approximately 14 km southwest of Belmopan. Situated in the karstic foothills of the Maya Mountains the site is in close proximity to the Roaring Creek and its associated alluvial valley (Figure 1). The foothills of the Maya Mountains exhibit geological features favourable to the formation of karstic features and caves (Miller 1996). Consequently, due to its situation in the karstic foothills, Pook's Hill is located approximately 5 kilometres north of a group of caves that were intensively investigated by the Western Belize Regional Cave Project (WBRCP), under the direction of Dr. Awe, as part of six field seasons between 1996 and 2001.

Site Description

The principal site of Pook's Hill is of a type commonly referred to as a *plazuela* group. The *plazuela* has been termed "Pook's Hill Group 1" or PKH1. When work was initiated there in 1999 the *plazuela* appeared to consist of the collapsed and mounded remains of seven structures. Since then an additional eighth structure has been identified during clearing excavations. The northern structure is the largest of the group and measures 21m long (east-west) and is over 3m high (above the modern ground surface of the plaza). The group as a whole occupies an area of approximately $1030m^2$, of which about a third is occupied by the plaza. With the exception of the eastern structure, the other structures are rectangular in form, based on surface mounded features, and were categorised as "range structures" (apparently topped by perishable superstructures in the absence of clear evidence for vaulting or vault stones). The eastern structure by contrast was square in plan – thereby suggesting that a special function "shrine" may be represented – as is common at many Lowland Maya sites, notably at Caracol (Chase & Chase 1994), Tikal (Becker 1999) and sites in the greater Belize Valley. Consequently, at the start of the excavations it was surmised that the *plazuela group* conformed to what Marshall Becker (1971, 1999) has referred to as a 'Plaza Plan 2' configuration.

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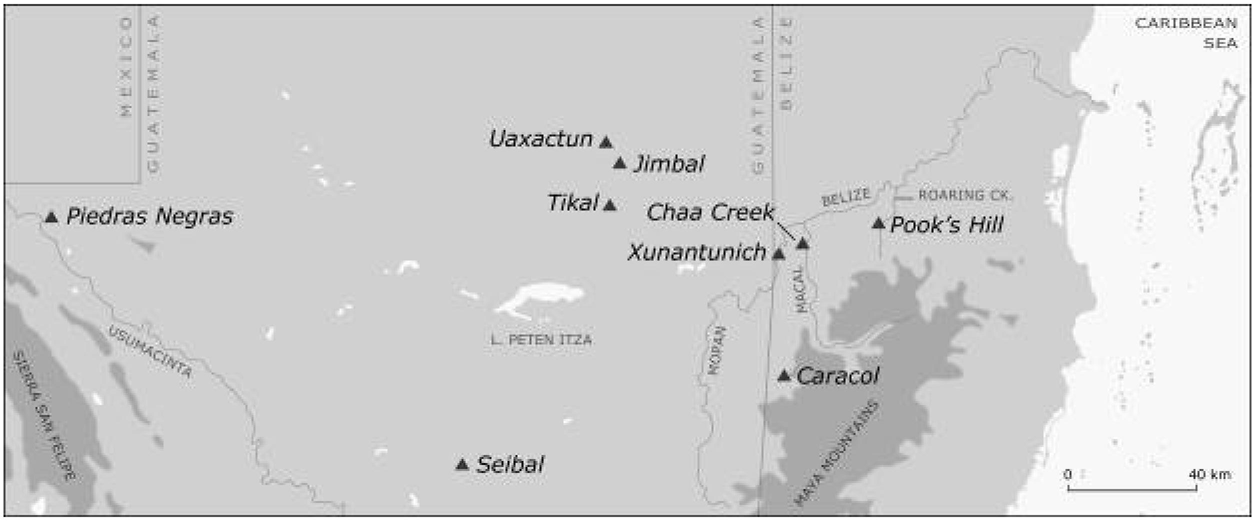


Figure 1. Detail of the Central Maya Lowlands showing the location of Pook's Hill and other archaeological sites mentioned in the text. Map aligned to UTM grid north. Shaded areas represent elevations above 300 m (MSL). Map by Christophe Helmke, based on maps by Ian Graham (1982) and Kevin Healey (1991).

Objectives

The Pook's Hill investigations were designed to resolve key issues raised by the contemporary finds in nearby cave contexts in the Roaring Creek valley. Notably, though ceramics in cave contexts tend to preserve well, they lack good stratigraphic context due to the taphonomic processes that characterize cave deposits (e.g. Brady & Scott 1997). Consequently, in order to properly seriate –and thus date– the cave ceramics it was necessary to gather data on sealed, stratified ceramic deposits from roughly coeval surface sites. In addition, gathering data on the funerary practices and artefactual assemblages from domestic contexts of surface sites would yield important comparative data against which the local cave assemblages could be gauged.

Pook's Hill was investigated using expansive horizontal stripping and limited vertical trenching, to assess the degree of congruence between ritual activities documented at the nearby caves and those taking place in domestic household contexts. Our investigations were also designed to explore a middle-scale site within the settlement hierarchy present in the Roaring Creek Valley. Based on settlement surveys conducted in the upper Roaring Creek Valley as part of the Pook's Hill operations, Andrew Bevan (who has been heading the GIS analyses of the settlement data) was able to determine that the PKH1 *plazuela* is indeed a near-median site in the range documented for *plazuela* groups in the area to date (which varies between c. 350 and 6650m^2).

Near the close of the WBRCP investigations in the Roaring Creek Valley we formulated several questions that could be efficiently answered with added work at nearby surface sites such as Pook's Hill. Were the artefactual assemblages from caves close analogues to those of surface sites, but merely in different contexts? Did funerary practices at cave and surface sites differ? If so, how are these data relevant to our understanding of ancient Maya ritual and domestic activities in the Roaring Creek valley?

1999 Season

For the 1999 season the principal objective was to determine the suitability of the site for comparative purposes. Was the

site occupied during the peak of cave usage (that is to say between the Late and Terminal Classic, c. AD 600 – 950)? Also did the site exhibit a shrine structure (Str. 4A) that could yield evidence of ancient, household, funerary customs? If so did the site conform to a Plaza Plan 2 configuration as had been hypothesized at the onset? (Figure 2a)

Before the initiation of archaeological investigations, Structure 4A had suffered from the depredation of looters (evidently in search of artefactual materials of commercial value for sale on the illicit antiquities market). This destruction took the form of a large trench nearly two metres wide and six metres long, penetrating from the western face into the heart of the structure. The 1999 season entailed the salvage of contexts affected by the looting and the screening of the looters' spoil heap for the recovery of all artefactual materials exposed and discarded in the looting process (Helmke 2000:301-310). As part of this salvage the looters' trench was cleared of debris and the exposed architectural series was recorded in section drawings (Figure 3; Helmke 2000:310-312). These sections revealed that the structure was built in at least three major phases. The terminal phase (Str. 4A-1st) was found to be mostly indistinct in section on account of slumping and partial collapse of the dry-laid boulder core that constitutes the architecture of that phase. The penultimate phase architecture (Str. 4A-2nd) in contrast, was considerably better preserved and contained the remains of a masonry crypt that had been bisected by the looters trench (Figure 3; Helmke 2000:320-321). Being rectangular in shape and apparently of funerary function this crypt had been completely emptied by the looters. Search for associated sub-floor caches was, unfortunately, for naught.

At the mouth of the looters' trench, however, a cluster of partially reconstructible vessels and human remains was found (i.e. SU 18; Helmke 2000:309, 320; Bassendale 2000:334, 339). This cluster seems to have been amassed by the looters but once deemed valueless it was left on site. The vessels represent the remains of Mountain Pine Red medial ridge dishes dating to the Middle Classic Tiger Run complex, which dates to the seventh century AD (Gifford 1976). If these vessels were originally deposited in the crypt – as seems likely – then the penultimate phase of architecture may also date to that period, a point that we hope to test by means of continued excavations in future seasons.

Lastly, a test excavation (EU 6) was set into the remnant core of the earliest structure (Str. 4A-3rd) at the end of the looter's trench to recover artefactual materials, which could assist in establishing the date of the building's initial construction. Though we could not reach bedrock in that test excavation we did penetrate much of the dry stone boulder core of Str. 4A-3rd. In the process, what appears to be a simple burial set directly into the core was found (designated PD 4A-1; Helmke et al. 2001:371-372). At the end of the season the 15 m^3 looters' trench was backfilled in order to prevent continued erosion and collapse of the structure. In all 550 human bone fragments pertaining to at least two individuals were recovered from the looters' spoil heap (Bassendale 2000). This burial plus the documentation of the masonry crypt, bisected by the trench were taken as tentative evidence that Structure 4A was indeed an 'eastern shrine' (Helmke 2000; Bassendale 2000).

2000 Season

For the 2000 season we targeted un-looted contexts of the eastern (Str. 4A) and western structures (Str. 2A) as well as the plaza platform in order to assess the quality of the architecture and to search for sealed

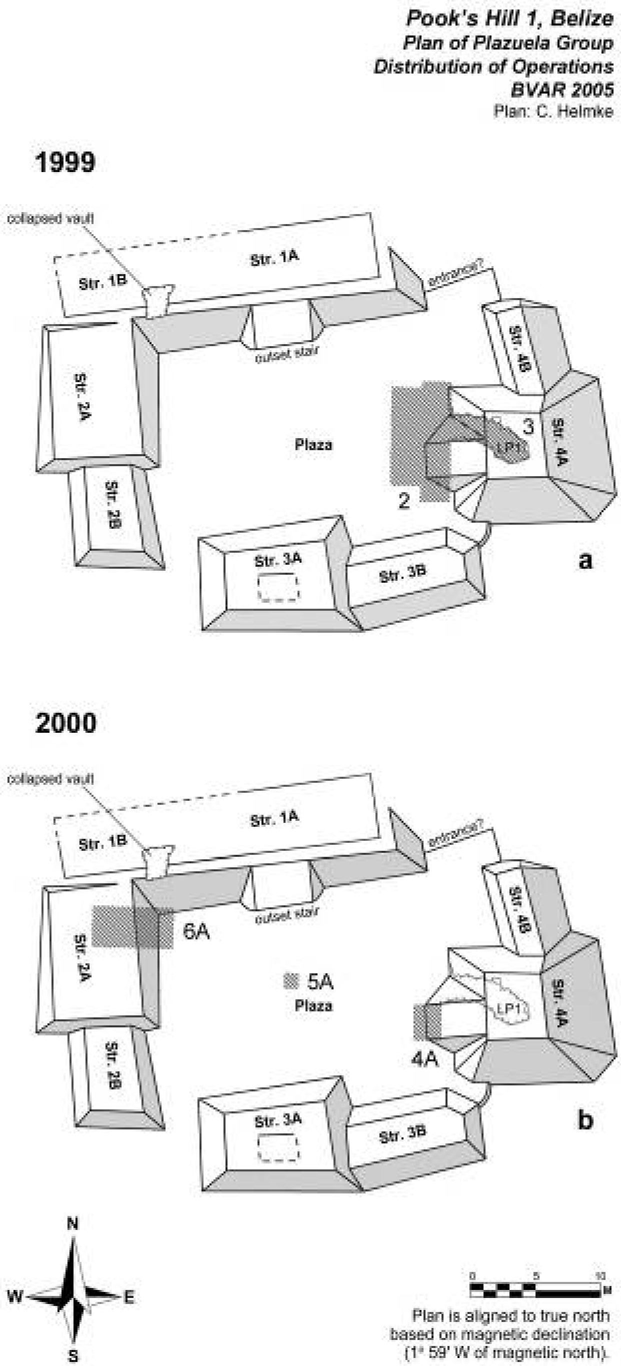


Figure 2. Plan of the Pook's Hill *plazuela* as mapped in 1999 with amendments made to the survey in 2000. Hatched areas represent extent of excavation operations by field season (note operation designations besides these). a) Plan of all the 1999 salvage operations. b) Plan of all the 2000 test excavations. *Plans and Survey by Christophe Helmke.*

associated artefactual deposits. Based on the content of the primary deposits encountered, as well as determinations of their formation processes, could we begin to assess the interplay between artefact and structure functions? (Figure 2b)

The 2000 season was aimed at testing the western and eastern structures as well as the plaza platform in contexts unaffected by looting. For the western structure (Str. 2A), the purpose of the excavations was to begin assessing its ancient function on the basis of its architectural configuration and associated artefactual deposits (Helmke et al. 2001a:396-397). The excavations did reveal three features at the base of the structure, sealed by collapse debris; commingled accumulations of artefacts, faunal remains and human bone (designated 'Clusters' 4 through 6; Helmke et al. 2001a:417-429). In addition, the purpose was to document the quality of the architecture in anticipation of planned consolidation efforts. Though the upper reaches of the terrace architecture exhibited some slumping and collapse, the quality and preservation of the architecture was found to be sufficiently high to allow for consolidation efforts in future seasons.

For the eastern structure (Str. 4A) superimposition of plans revealed that while the looters' trench destroyed an undetermined amount of special deposits, it did not penetrate through the primary axis of the structure, the preferred locus for the deposition of caches and burials (Chase and Chase 1998; Loten and Pendergast 1984:3, 5; Pendergast 1998; Helmke et al. 2001b:330-331). The test excavations established on the primary axis revealed the remains of the shrine's terminal outset stair and once penetrated four burials (designated Bu. 4A-1 through 3) and a dedicatory cache (Ca. 4A-1) within the core of the stair and that of the underlying plaza floors (Helmke et al. 2001b:357-373).

2001 Season

For the 2001 season we focused our attention on the western structure (Str. 2A) by means of stripping excavations in order to assess architectural configuration and continue exposure of artefactual deposits encountered at the foot of the structure. Could these deposits shed light on the structure's original function? Smaller operations were also initiated on the eastern shrine (Str. 4A) and northern structure (Str. 1A) (the latter to test quality of architecture as part of consolidation efforts). (Figure 2c)

When we returned to the site in 2001 and started stripping excavations in earnest as part of research excavations and architectural consolidation efforts (Helmke et al. in press; Ek & Helmke in press). The season was devoted principally to the complete exposure and consolidation of the western structure (Str. 2A) (Helmke et al. in press). These excavations allowed complete frontal exposure of the structure's platform clarifying its architectural configuration and leading to the discovery of the principal stair. Excavations penetrating the stair to bedrock brought to light one problematical deposit and three burials (Bu. 2A-1 through 3), two of which were inclusive in the core of the underlying plaza floor and may be related to the dedication of the structure's primary stair, while the third (Bu. 2A-3) is intrusive into the lowest step of the stair. At the northern end of the structure's summit an artefactual feature was exposed (Cluster 8) resting directly atop terminal architecture. At the southern end of the structure, stratigraphic excavations of the collapse debris, revealed the presence of a widespread, but thin lens of artefacts and faunal remains along a clear interstice between discrete strata of collapse debris (Cluster 7). Other smaller operations were also conducted on the northern (Str. 1A) and eastern structures (Str. 4A).

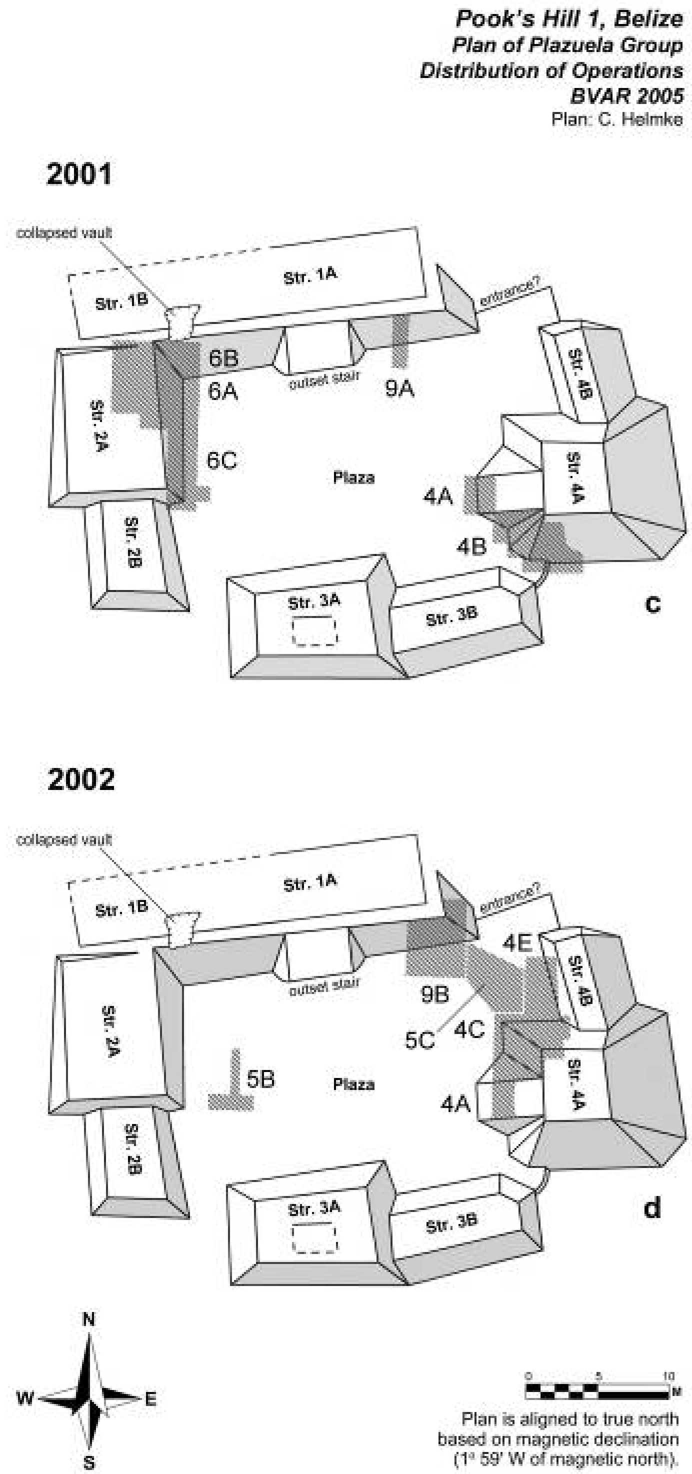


Figure 2. *Continued.* c) Plan of the 2001 excavations. d) Plan of the 2002 excavations.

The test excavations of the northern structure revealed it to be the best-preserved building in the *plazuela* and provided good data for the projection of architectural alignments (Saunders et al. in press). Here too, the stratigraphic excavations of the collapse debris also yielded evidence for lenses (SU 126b) comparable in content and stratigraphic context to those discovered in association of the western structure (Str. 2A). If the lenses are the product of human agency, these may provide evidence for continued occupation of the PKH1 *plazuela* after initial structural collapse of the buildings, or perhaps an ephemeral re-occupation of the site, after initial abandonment. Of note is the fact that these deposits occur in a stratigraphic position that postdates the primary artefactual deposits associated with Strs. 2A and 4A and are thus necessarily later.

The excavations of the eastern shrine (Str. 4A) were twofold: one set of investigations were focused on stripping terminal and penultimate phase architecture (i.e. the southwest quarter of the building; Ek & Helmke in press), while the other set continued test excavations that had been initiated in 2000 by carrying these to bedrock (Bassendale et al. in press). The latter exposed another three discrete interments (Bu. 4A-5 through 7) and continued excavations of Bu. 4A-3 that proved to extend further eastward into then unexplored portions of the stair's terminal core.

2002 Season

For the 2002 season we conducted expansive stripping excavations of the terminal phase architecture of the eastern structure (Str. 4A) and it's associated ancillary platform (Str. 4B). Again these were conducted with the purpose of elucidating architectural configuration and original structure functions (both were subsequently consolidated in the latter portion of the season). The subsidiary operation on the northern structure (Str. 1A) was also continued. (Figure 2d)

The 2002 season was focused on complete exposure of the face of the two eastern structures and their consolidation (Strs. 4A and 4B). Most of the excavations continued the architectural stripping of terminal phase architecture initiated in 2001 and managed to completely expose the front of Str. 4A and much of Str. 4B (Helmke 2003). Architectural stripping revealed that, in its terminal phase, Str. 4A was a round shrine with a double terrace configuration. These excavations also led to the discovery of four features along the base of Str. 4A. Two of which were artifactual deposits located within internal, partly concealed corners of architecture (Clusters 10 & 11). Another is a set of three cobbles (SU 203b), while the fourth represents the poorly preserved remains of a small masonry 'altar' secondarily set against the foot of the terrace architecture (Helmke 2003). Other excavations continued the laborious excavation of the core of the principal stair of Str. 4A-1st. In the process the remainder of Bu. 4A-3 was completely exposed, thereby terminating excavations of this interment that had spanned over three seasons. The core of underlying floors was also tested all the way to underlying bedrock and another dedicatory cache (Ca. 4A-2) was discovered in the process. The axial excavations were halted once bedrock had been exposed throughout and the entirety of the well-preserved, underlying penultimate axial stair of Str. 4A-2nd had been uncovered.

By the end of the 1999 – 2002 seasons of investigations we managed to expose, document and preserve much of two of the eight structures forming the *plazuela* (i.e. Strs. 2A & 4A). In all for these four seasons we conducted 133 days of

excavations (counting only workdays), with 62 different personnel having worked at the site during this time, accruing a total of 1031 person-days on site (including both excavations and consolidation efforts). Considering these statistics it is clear that comprehensive stripping excavations are time-consuming and labour-intensive endeavours. The axial trenching of structures in the Maya Lowlands has become customary and proven to be an expedient and useful method to reveal architectural series and associated special deposits. Horizontal stripping, in contrast, remains less common (perhaps on account of its time-consumption), though it is effective in exposing the totality of a structure's architecture as well as all associated terminal deposits. Considering each research strategy it is clear that stripping generates a far more comprehensive view of a site, and one that has the potential to expose features that otherwise remain underrepresented in trenching excavations. As complete architectural stripping is a mandatory prerequisite to consolidation efforts, at Pook's Hill, we were thus able to judiciously merge our research strategy with the touristic development of the site.

Special Deposits

In all – throughout the *plazuela* group – we were able to excavate twelve discrete burial contexts, two caches, and three problematical deposits though only the former two categories are reviewed below. Three of the burials and one problematical deposit were associated with the outset stair of the western structure (Str. 2A-1st). Not surprisingly, all other deposits were discovered as part of the 'eastern shrine' (Str. 4A), which appears to have been the primary locus of ritual activities.

Burials

Excavations of the burials and osteological analyses were conducted by Megan Bassendale and Sally Graver with the assistance of Jennifer Piehl and Sherry Gibbs. All burials were found to be prone and orientated north south with heads to the south as is customary for the greater Belize Valley from Middle Formative times onward (> 600 BC) (Song 1995; Welsh 1988). All were primary single burials and found within the core of superimposed plaza floors. One exception is to be noted, however, which is the multiple Burial 4A-3 that was found in the core of the terminal outset stair of Str. 4A-1st. Interestingly, the burials associated with the shrine all appeared to face west, onto the plaza, while those associated with the western structure faced predominantly east, also onto the plaza (but also towards the shrine). To date we have not been able to document analogous evidence of this practice at other sites. This evidence does, however, indicate a concerted pattern within the realm of memory's performance.

Most of the interments were simple, set directly into the core of plaza floors, or the core of architectural components and without any associated funerary goods, as is typical of most Lowland burials (Welsh 1988; Jennifer Piehl, pers. comm. 2000). Occasionally, cists of two or more stone slabs served to shelter and frame the skulls. Most skeletal individuals exhibited little more than the remains of pendants or necklaces – apparently personal possessions in life. Incidental and minor inclusions of *jute* shell and chert debitage were noted in the fill of many burials, however. Nonetheless, three burials stand out for their associated funerary goods, these are Burials 4A-7, 4A-3, and 2A-2. Let us focus on just Burial 4A-3, which stands most apart from all others.

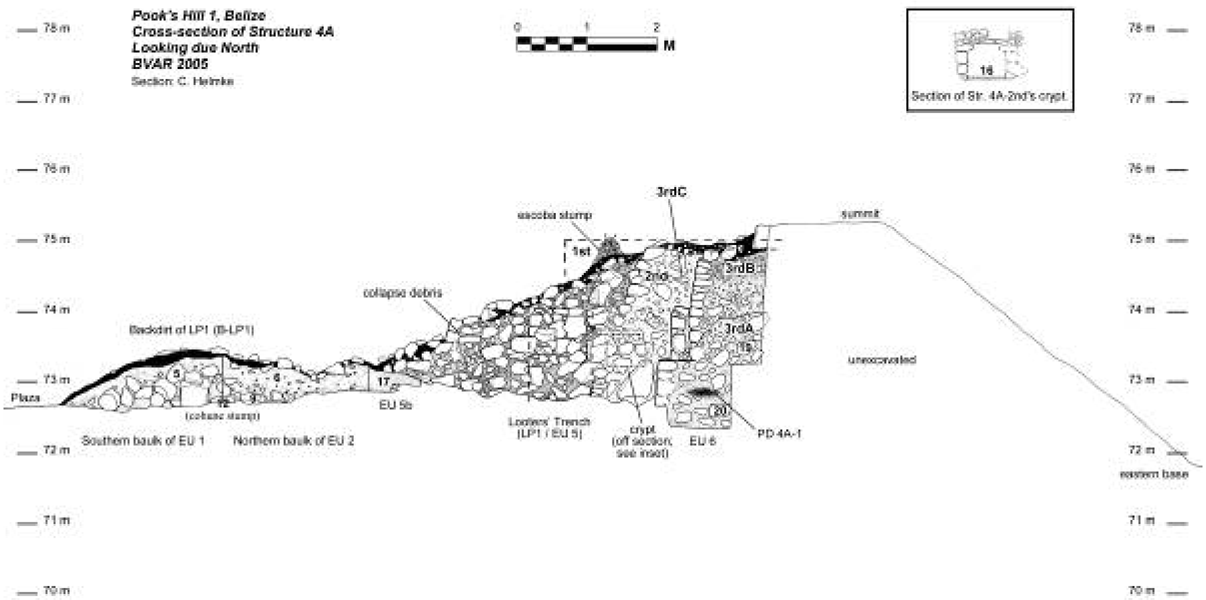


Figure 3. Section through the eastern shrine (Structure 4A) as exposed in the northern baulk of the looters' trench. Note the funerary crypt bisected by the looters' trench as well as the three discrete phases of architectural construction (labelled 1st, 2nd and 3rd respectively). Elevations are in meters (HAE).

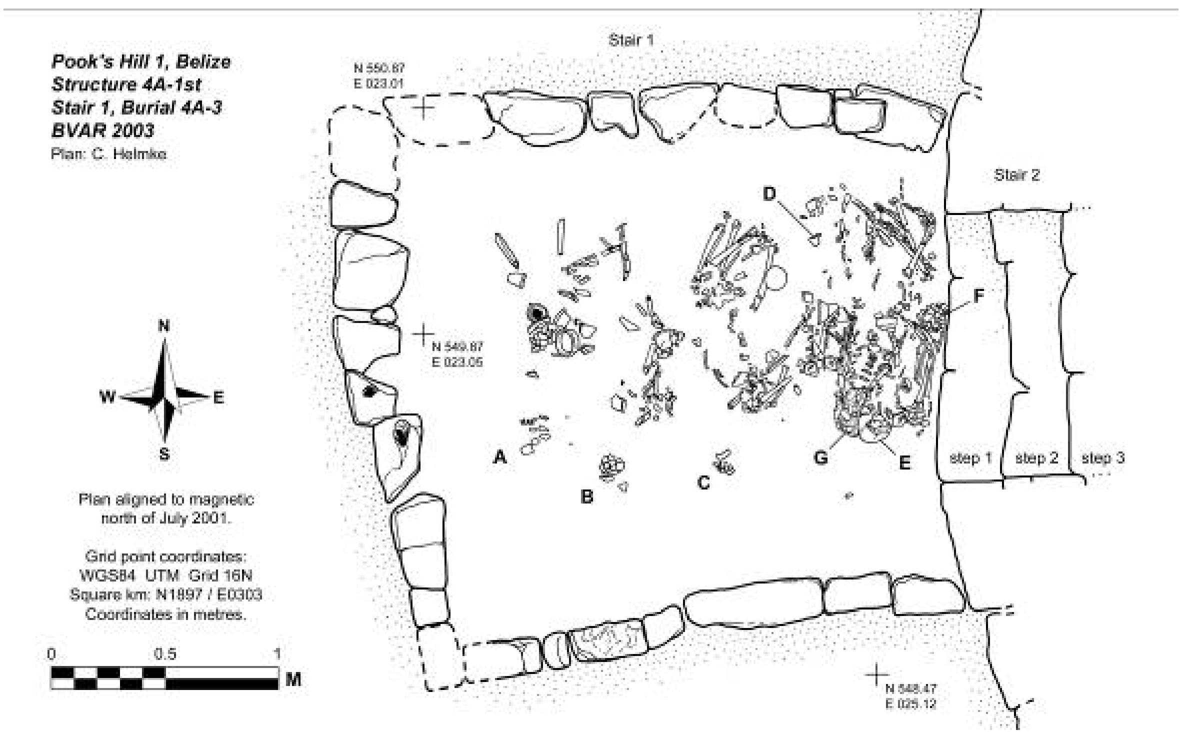


Figure 4. Plan of the basal course of the terminal outset Stair 1 of Structure 4A-1st and Burial 4A-3 contained in its core. Note also the inset Stair 2 of Structure 4A-2nd that was engulfed by the terminal phase construction of Stair 1

Burial 4A-3 was fully excavated between 2000 and 2002, within which a total of seven individuals (Indv. A-G) were documented (Figure 4). The individuals are represented by varying degrees of skeletal completeness, ranging from a single skull (suggesting a secondary interment) to more complete skeletons of primary interments. This deposit thus stands in stark contrast to all other burials discovered at Pook's Hill to date, which are typically discrete primary interments of single individuals. Notably, this burial is coeval to the latest construction phase of the shrine and may differ from other interments as a result of changing ritual practices associated with that structure. On the whole Bu. 4A-3 contained the fragmented remains of at least seven Terminal Classic (AD 830 – 950) ceramic vessels (including one Miseria censer with appliqué spikes, one moulded-carved vase with tripod supports, one red ware incised tripod vase, a small fragmentary 'poison bottle' or *candelero*, and an incised redware pyriform vase with pedestal base), one fragmentary granite sphere, two exhausted obsidian cores, fragments of prismatic obsidian blades, 16 large rodent incisors (gibnut?), one small transversally perforated shell pendant, one jadeite inlay, and one fragmentary pyrite mosaic tessera (of a mosaic mirror) (Helmke 2003). In addition, paleobotanical analyses of the burial fill conducted by Christopher Morehart, revealed pine (*Pinus* sp.) and hardwood charcoal as well carbonised residues of an unidentified taxon (possibly derived from *copal* incense or pine resin) (Helmke et al. 2001b; Morehart 2001).

Caches

The two Pook's Hill caches were found in association with the eastern shrine. It is noteworthy that although caching is deemed a widespread and common ritual practice elsewhere in the Lowlands (Freidel et al. 1993; Mock & Selsor-Walker 1998), at Pook's Hill this type of votive expression seems exceptional. Both caches are dedicatory and were sealed in the core of the earliest plaza platform floor documented (Floor 3).

Cache 4A-1 was found in alignment to Bu. 4A-2 and it may thus be that the two are somehow related. As both deposits are offset north of the terminal primary axis, the cache may refer to the dedication of the 4A-3rd shrine (or earlier?), which orientation differed from its penultimate and terminal guises. Cache 4A-1 consisted of the fragmentary remains of three ceramic vessels of which two dishes may have been set lip-to-lip (Helmke et al. 2001b:368-371). One is an unidentified, globular, bichrome vessel, another is an orangeware dish with basal flange, while the third is a redware medial ridge dish, which makes the deposit transitional late Early Classic (Manik 3) to early Late Classic (Tiger Run) (Gifford 1976). The lower of the two vessels (the redware) exhibited signs of discolouration and contained as many as forty *jute* snail shells (some of them charred) indicating that some substance had been burnt within the ceramic container. Apart from minor flecks of carbon these vessels were not found to contain anything else, leading to the conclusion that the offering must have been of perishable, organic material.

The second dedicatory Cache 4A-2 which contained 47 lancet-shaped, prismatic obsidian blades and a shell *adorno* had been placed exactly along the primary axis of the penultimate version of the shrine (Helmke 2003). The *adorno* was originally in the shape of a six-rayed-star from which two of the 'rays' were snapped off before deposition (Norbert Stanchly pers. comm. 2005). The deposit was associated with an episode of burning as is indicated by charcoal inclusions and partly charred ceramic sherds (the latter appear to be

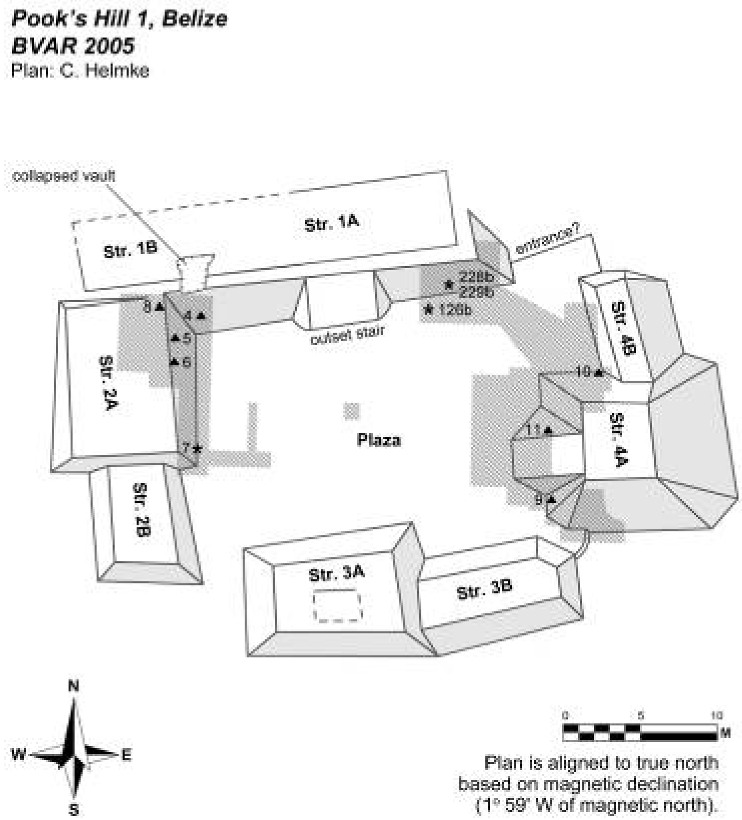


Figure 5. Plan of the *plazuela* showing the distribution of all the artefactual features discovered by the close of the 2002 field season. Triangles denote 'clusters' of terminal occupation debris, while asterisks represent artefactual lenses amidst collapse debris strata. Designations of features are provided besides their associated symbol. Areas cumulatively excavated during the 1999 – 2002 seasons are shown as shaded.

incidental inclusions). Dating of the special deposit will be possible on the combined basis of diagnostic ceramics, ^{14}C and obsidian hydration. Analysis of the matrix sample recovered from Cache 4A-2 has only revealed pine charcoal (Christopher Morehart, pers. comm. 2004), suggesting that pinewood played an important role in ancient ritual activities (cf. Morehart et al. 2005).

Features

In all a total of ten features comprising artefactual deposits (termed 'clusters' in the field notes) were found in association with the western, eastern and northern structures (Figure 5). Five of the features were discovered in association with the terminal architecture of the western Structure 2A-1st (including one of the 'lenses'), while two 'lenses' were found in association with the northern structure 1A-1st. The remaining three were encountered at the foot of the basal terrace of Structure 4A-1st.

Two basic types of features have been noted at Pook's Hill. The most common is referred to as 'terminal occupation debris' that comprises secondary, commingled deposits of artefactual remains (mostly ceramic sherds, freshwater shell, chert debitage, fragments of prismatic obsidian blades, as well as fragmentary granite *manos* and/or *metates*) with occasional inclusions of small special finds (such as ceramic effigy ocarinas,

spindle whorls and singular items of regalia such as greenstone beads from necklaces and shell tinklers), the remains of food refuse and macrofloral remains, as well as faunal and/or human bone fragments. These features exhibit high artefact content relative to the surrounding collapse debris matrices, are typically recognised on the basis of their spatial discreteness and in most cases rest directly atop terminal plastered surfaces and/or abut the foot of terminal terrace facings. The second type of features are referred to as 'lenses' and have many of the same characteristics as 'terminal occupation debris' except that these occur along stratigraphic interstices between discrete strata of collapse debris and that these contain lower frequencies.

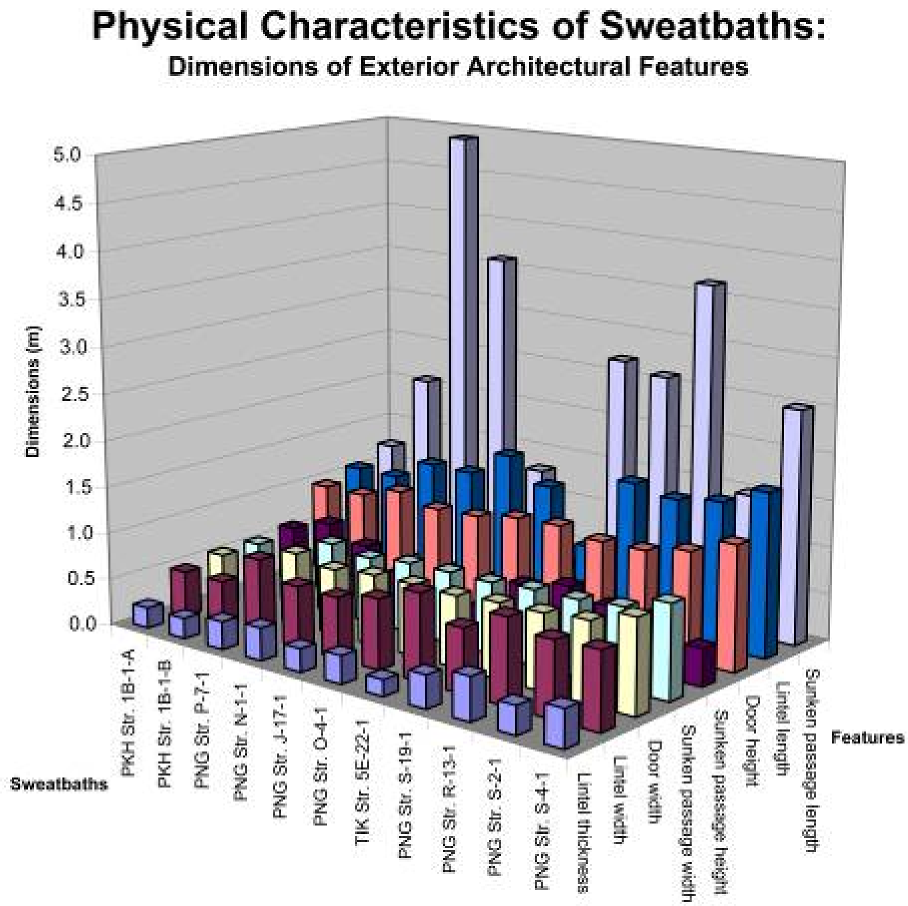
All 'terminal occupation debris' features were found either directly atop and/or abutting terminal phase architecture and were sealed *in situ* by collapse debris thereby maintaining their spatial and constituent integrity. By virtue of their content, as well as their spatial and stratigraphic context, these deposits are thought to be intimately tied to the activities that took place at each structure in the Terminal Classic. Interestingly, the preferential context for clusters of secondary refuse accumulations is in internal corners formed by terraces and stairs, as well as in corners formed between structures (as if swept off stairs and away from common paths of travel). This in turn suggests that the organic and inorganic elements of these features were treated as part of typical refuse processing actions that ultimately resulted in the formation of discrete 'clusters' (Hayden & Cannon 1983). While many include fragments of ceramic serving vessels, food preparation utensils (ceramic cooking *ollas* and *comales*), the remains of food-bearing elements of animals and shells, as well as the rare solitary item of regalia, these only rarely include fragments of censers (or braziers), that might otherwise identify these as the remains of ritual actions, though the results of detailed on-going analyses may eventually alter this interpretation.

Architecture

Structure 2A & Structure 1B

The complete exposure of the western structure (Str. 2A) in 2001 demonstrated that it had a simple double terrace configuration, rectangular layout, with a small outset stair (Stair 1) of three steps. Along the summit we found evidence for the remains of so-called 'knee-high' walls that apparently served as the foundations for a perishable superstructure (entered by three separate doorways). Clearing revealed that the western and the northern structure abut, thereby forming an L-shaped layout. Leading up to the summit of Structure 2A is another small stair (Stair A) of five steps that was added after the western and northern structures converged.

In 2001 when we cleared northward towards the point of interstice between the western (Str. 2A) and northern (Str. 1B) structures, we found the well-preserved terrace face of Str. 1B-1st, punctuated by a diminutive doorway (filled with collapse debris and humic matrix) with a perfectly-preserved monolithic limestone lintel still preserved *in situ*. The terrace and doorway face south and as such are part of the northern (Str. 1B) rather than the western structure (Str. 2A) despite the architectural contiguity of both buildings in the terminal phase. Directly above the doorway is a depression that when first noted and surveyed in 1999 was thought to be an ill-placed looters' trench. When clearing of the collapse debris began in 2001 just to the south of this depression (before the discovery of the doorway) it was clear that no spoil heap for the putative looters' trench existed. With the discovery of the doorway, the depression above it could be identified



Physical Characteristics of Ancient Maya Sweatbaths:
Dimensions of Exterior Architectural Components

		L-l	L-w	L-th	D-w	D-h	SP-l	SP-w	SP-h	B-l	B-w	B-h
2	PKH Str. 1B-1-A	1.07	0.48*	0.22	0.54	0.97	1.23	0.54	0.60	1.60	1.23	0.60
3	PKH Str. 1B-1-B	1.07	0.48*	0.22	0.54	0.97	2.08	0.54	0.75	1.60	1.23	0.80
4	PNG Str. P-7-1	1.30	0.83	0.30	0.77	1.10	4.90	0.75	0.60	**1.80**	**0.90**	**0.61**
5	PNG Str. N-1-1	1.30	0.65	0.35	0.70	1.00	3.60	0.70	0.40	**2.60**	**1.43**	**0.69**
6	PNG Str. J-17-1	1.58	0.65	0.25	0.75	1.02*	1.30	0.75	0.25	---	---	---
7	PNG Str. O-4-1	1.33	0.75	0.30	0.76	1.10	0.30	0.76	0.25	---	---	---
8	TIK Str. 5E-22-1	0.76	0.93	0.18	0.76	1.12	**2.70**	0.76	0.60	---	---	---
9	PNG Str. S-19-1	1.56	0.68	0.35	0.80	1.05	2.60	0.80	0.70	---	---	---
10	PNG Str. R-13-1	1.48	0.91	0.46	0.81	1.06	3.65	0.81	0.60	---	---	---
11	PNG Str. S-2-1	1.55	0.80	0.30	0.85	1.16*	1.50	0.85	0.60	---	---	---
12	PNG Str. S-4-1	1.75	0.82	0.40	1.00	1.33	2.50	1.00	0.40	---	---	---
	Mean	1.23	0.58	0.28	0.69	0.81	2.20	0.69	0.48	1.90	1.20	0.67

Figure 6. Physical characteristics of the probable Pook's Hill sweatbath versus those documented at Piedras Negras and Tikal. Abbreviations for uppercase letters are: **L**: lintel; **D**: door; **SP**: sunken passage; **B**: bench; lowercase abbreviations are: **l**: length; **w**: width; **th**: thickness; and **h**: height. All measurements rendered above are maxima. Underlined numbers were derived from measurements off scaled plans. Bolded numbers denote mean measures when multiples of the same features are found in association with the same sweatbathing structure. The asterisks (*) denote reconstructed measures based on Piedras Negras data using linear regression formulas with zero intercept. All other data is provided in Satterthwaite (1952) and in Jones (1996).

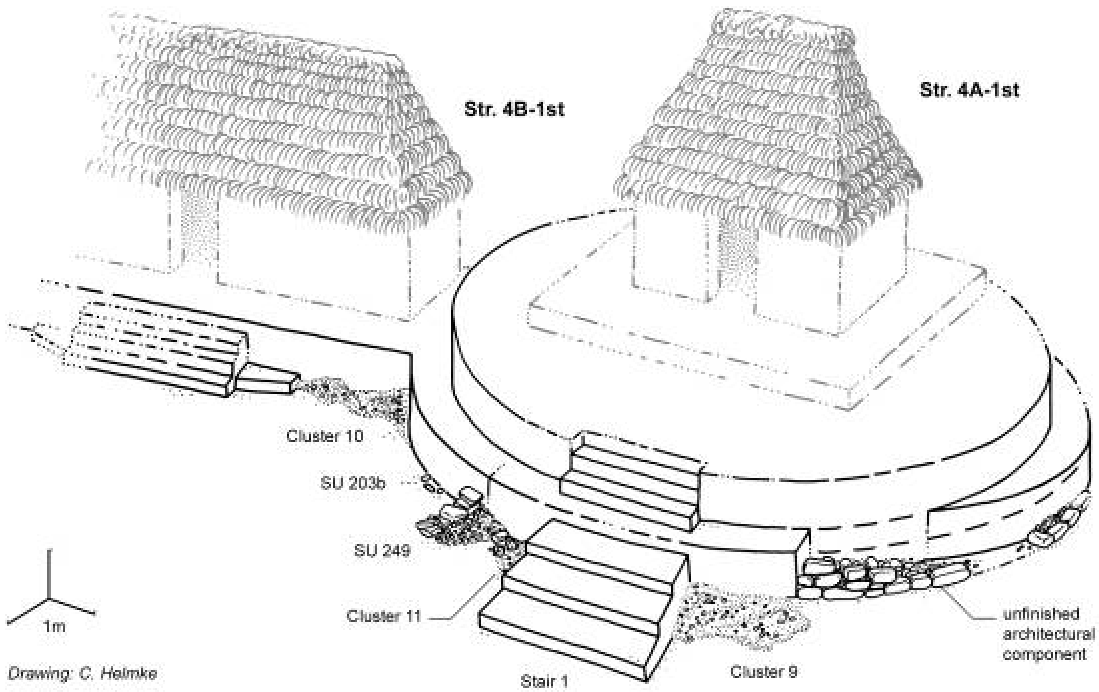


Figure 7. Isometric view of the eastern structures of Pook's Hill 1 as they may have appeared in the Terminal Classic (AD 830 – 950). Note that Cluster 11 is partly obstructed by Stair 1 in this northeasterly view. Perishable superstructures of thatch and adobe are conjectural.

as a collapsed vault. Vaulted architecture is an attribute typically qualified as diagnostic of elite architecture; the discovery of this type of architecture at Pook's Hill was thus unexpected. As the season was nearing its end and consolidation efforts still had to take place, it was deemed prudent to leave the concerted excavations of the vaulted room for another future season.

The principal characteristic of the door is its diminutive size (measuring no more than 1.0 m high and 0.6 m wide) that it shares with sweatbathing structures elsewhere in the Maya area and Mesoamerica generally. In addition, a bench was found framing the western side of the doorway and tentative evidence was found for another symmetrically placed to the east (though that section had not then been cleared in its entirety). These benches and the small 'corridor' they form leading up to the door are also strongly reminiscent of features associated with the exterior of sweatbaths at Piedras Negras (i.e. benches and 'sunken passages', cf. Satterthwaite 1952; Houston et al. 1998:44). Research at the end of the season revealed that the measurements of the door, lintel and corridor match the physical characteristics of contemporaneous sweatbaths at Piedras Negras (Figure 6) (Satterthwaite 1952; Mark Child pers. comm. 2002). The northern continuation of the artefactual deposit termed 'Cluster 4' was found to partly fill the 'corridor' and here was found to contain –among many other artefacts– several partial effigy ocarina fragments, faunal remains and parrotfish bones, as well as a dislodged bannerstone (Helmke et al. in press). The presence of this artefactual deposit in most of the corridor, right up to the doorway (where the excavations ceased)

suggested that in its last phases, the structure no longer served its primary intended function (again similar to sweatbaths S-2 and S-4 at Piedras Negras; cf. Houston et al. 1998:44, 46). As such it seemed possible that another special function structure had been discovered at Pook's Hill, though future excavations would have to find corroboratory evidence to support this hypothetical identification.

Structure 4A

The full exposure of the eastern shrine revealed that in its terminal phase (Str. 4A-1st) it comprised a two-tiered, terraced platform, forming a round structure with a principal axial outset stair of seven broad steps, leading to its summit (Figure 7) (Helmke 2003; cf. Loten and Pendergast 1984). In contrast, in its penultimate phase (Str. 4A-2nd), which was partially exposed during the 2001 and subsequent 2002 seasons, the building also exhibited a two-tiered, terraced configuration anticipating the design of its terminal successor. The penultimate building, however, adhered to a sub-rectangular plan, having rounded corners and imposing stair-side outsets associated with each terrace (similar in size and configuration to Xunantunich Str. A-14), inset into which was the principal stair of seven steps (Stair 2; Ek & Helmke in press). The architecture of the penultimate and terminal phase buildings thus exhibit distinct designs, but share the double terrace configuration and location of the principal stair. In 2001 the southwestern flank of the penultimate basal terrace of structure 4A-2nd was exposed (Ek & Helmke in press). In the process a poorly constructed architectural component was encountered (Architectural Unit 2). Initially these remains were interpreted as a terminal phase addition, possibly forming a low platform (Ek and Helmke in press). Exposure of the totality of the shrine's face in 2002, however, revealed that the architectural component encountered in 2001 formed part of the round basal terrace of the terminal phase refurbishments of the structure, which by all evidence remained unfinished at the time of the site's abandonment (Helmke 2003). Presently, the terminal phase has been tentatively dated to the Terminal Classic (AD 830 – 950), a point that may be corroborated once all ceramic analyses and carbon dating assays have been completed.

Post-dating the terminal phase construction is an architectural component that is represented by the poorly preserved remains of masonry aggregate and partly disarticulated facings set according to a roughly rectangular plan (SU 249). Due to its location to the north of the principal axial outset stair of Str. 4A-1st this component has suffered from the looting incursions. This component appears to have been built abutting the face of the terminal basal terrace, and though it remains of unidentified function, a very similar component has been found in the *plazuela* group known as Plantain, in the Chaa Creek area (Connell 2003: 36, Fig. 4.7c). The Plantain example is a small masonry platform, one course high, measuring c. 1.8 by 0.8 m with its long axis oriented north south (Connell 2003: 36). The platform in question was also built to the north of the principal outset stair of the *plazuela*'s eastern structure; thus in exactly the same location as the Pook's Hill example. The Plantain example has been described as an 'altar that was at the centre of the *plazuela*'s termination ritual' (Connell 2003:36) based on the associated artefact deposits associated with the small platform. Though the Pook's Hill example is quite damaged it may have measured c. 1.7 by 1.2 m originally and it too was associated with an artefactual deposit (Cluster 11). Found in possible secondary association to this component was a fragment of a stucco moulding coated in

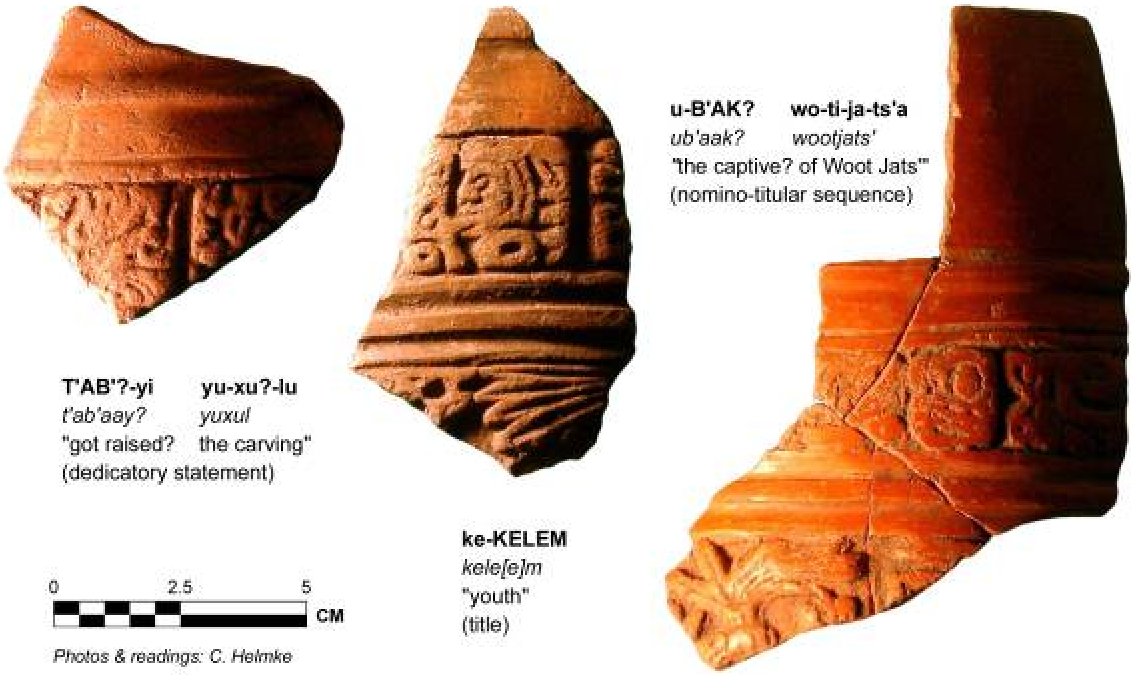


Figure 8. Sample of Terminal Classic (c. AD 830 – 950) moulded-carved vase sherds exhibiting fragments of glyphic inscriptions. Transcriptions, transliterations and translations of glyphs represented are provided.

red hematite pigment –indicating that during at least one of the phases of construction the shrine was embellished by brightly coloured, modelled stucco. The association between the colour red and the eastern cardinal direction in Maya cosmology (Thompson 1934) suggests that the use of red stucco here is probably far from coincidental (a point supported by the absence of red-tinted plaster from all other contexts at Pook's Hill). The context of this architectural component in association with the eastern shrine and the identification of a comparable example associated with termination rituals tentatively suggest that this small platform may also have served as a ritual platform upon which offerings were made.

Hieroglyphs

Another important find made during the course of the 2002 season was the discovery of partial glyphic inscriptions. These were all represented on sherds derived from Moulded-carved vase fragments, which are diagnostic of the Terminal Classic (c. AD 830 – 950). In keeping with Classic Maya practices these texts record a dedicatory formula known as the 'Primary Standard Sequence' followed by the name of the patron or owner of the particular vessel. In the case of the Pook's Hill specimens the sherds record part of the titular clause of a particular historical figure named *Olom* (Figure 8), for whom contemporary records are known in the inscriptions of neighbouring sites in Guatemala (Helmke 2005). Specifically, contemporary records for *Olom* span between AD 810 and 830 at Uaxactun while a posthumous reference is known from Jimbal, dated to AD 879 (Helmke 2005). The tie established between Pook's Hill and this historical figure –while unexpected– is in fact duplicated at several sites in the greater Belize Valley and parts of

adjoining eastern Guatemala, where ceramic vases bearing this individual's name are widespread, but apparently restricted to a particular social class engaged in competitive feasting (Helmke 2001). The distribution of these vases thus marks the extent of the social network in which these vessels played a prominent part. However, it remains less clear if the distribution also reflects a more formal socio-political territory in which this figure operated.

Conclusion

Discoveries made at Pook's Hill offer a detailed perspective on changing ritual practice and social transformation in the Roaring Creek Valley and greater central Belize. Burial 4A-3 for example stands in stark contrast to all other burials discovered at Pook's Hill, which are typically discrete primary interments of single individuals. Notably, this burial is contemporary with the latest phase of the shrine and may differ from other interments as a result of changing mortuary practices associated with that building. Moreover, round shrine structures in the Maya Lowlands, such as the one at Pook's Hill, are relatively rare, but appear to gain some prominence during the Terminal Classic, with notable examples at sites such as Seibal in Guatemala (Smith 1982:164-173). This architectural type appears to be associated with socio-political re-organisation, increased contact with neighbouring populations and changes in ritual practices occurring under the influence of so-called 'Mexicanised' Maya neighbours (Culbert 1973). These conclusions are also suggested by the presence of Moulded-carved ceramics, which bear glyphic references to a foreign patron. The presence of a vaulted sweatbath structure indicates the ancient inhabitants of Pook's Hill were active participants in what are elsewhere seen to be elite activities. The hygienic, liminal and ritual properties of sweatbaths and sweatbathing also suggest that this structure may have served complementary performative functions in tandem with the eastern shrine. Of note is the changing character of ritual activities, with the access to the sweatbath partly blocked with what has been termed 'terminal occupation debris' and the small offering platform appended to the eastern shrine. The diversity of activities identified at Pook's Hill to date (in type and in degree) means that we have a good basis against which to gauge the activities documented at Roaring Creek cave sites. These examples from Pook's Hill may thus provide particular insights into changing ritual practices and their association to social transformation in the Roaring Creek valley and central Belize as a whole. Further investigations will clarify whether such patterns are idiosyncratic or reflect wider social processes.

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13 PREDICTING LATE CLASSIC MAYA SETTLEMENT PATTERNS

Anabel Ford and Keith C. Clark

At El Pilar, the Belize River Archaeological Settlement Survey investigates the significance of agricultural resources to the Maya settlement and land use patterns in the Late Classic using the analytic capabilities of geographic information systems (GIS) and the recently developed UCSB Maya Forest GIS (ADL 2005). The data have allowed the application of weights-of-evidence statistical techniques to explore the Maya settlement patterns based on known archaeological sites.

Introduction

At the peak of the Maya civilization, between 600 and 900 AD, the population density of the greater Peten region of Northeastern Guatemala and Western Belize has been estimated to be up to nine times that of today with densities speculated to be 1000 persons per sq km and growth rates up to 2.5% per annum. A vast and complex system of "urban" centers developed that included the huge city of Tikal at one end to the continuum of settlement down to thousands of household farms with isolated buildings interspersed across the landscape. Today, our incomplete record focuses on only a fraction of the Maya settlements that have been mapped and analyzed. This record provides a base for understanding Maya patterns of land use and based on this record, we apply research methods that use the data, and combine the power of GIS and statistical modeling to predict the distribution and number of Maya settlements from the subset of known sites from the Belize River Archaeological Settlement Survey. Our modeling exercise allows us to test the model in the field, to evaluate environmental constraints on Maya settlement, and to create a map showing those regions worth conserving with numerous Maya settlements.

The ancient Maya were an agrarian society with a well-documented development process that transformed the Maya forest into a sustained human landscape (Beach 1998; Culbert 1998; Dunning 1996; Fedick 1996, 1989; Flannery 1982; Harrison and Turner 1978; McAnany 1995; Miles 1957; Pope et al. 1996; Rice 1978; Sanders 1962, 1978; Turner 1993; Voorhies 1998). Yet while the evolution of the ancient Maya is renowned, there is considerable speculation on the nature of their subsistence and settlement distribution (Chase 1987; Ford 1991; Haviland 1972; Rice 1991; Turner 1990; Tourtellot 1990; Dunning et al. 2002). Data on settlement distribution, civic center locations, and the importance of natural and cultural influences fuel the debates on the population for the Maya area. We have found that these debates have ignored the relationship between the spatial distributions of Maya settlements and interaction with the environment that controlled aspects of daily life. We investigate the significance of agricultural resources to the Maya settlement and land use patterns in the Late Classic using the analytic capabilities of geographic information systems (GIS) and the recently developed UCSB Maya Forest GIS (ADL 2005). The data have allowed the application of weights-of-evidence statistical techniques to explore the Maya settlement

Figure 1: The location of the Belize River Area

patterns based on known archaeological sites.

Research on the Maya has produced a large corpus of information on Maya settlement and interpretations of patterns founded on focused surveys around the region (e.g., Bullard 1960; Willey 1965; Puleston 1973; Rice 1976; Ashmore 1981; Ford 1986; Fedick 1988; Webster 1988; De Montmillion 1989; McAnany 1995; Pyburn 1990; Smyth 1995; Tourtellot 1996). Settlements identified in these studies have demonstrated that intensive occupations were strongly influenced, if not fully determined by, geographic factors. It is widely acknowledged that settlement densities were high in the well-drained areas of the region and that distributions are related to Maya farming choices, suggesting a wide diversity in agricultural pursuits. (Adams et al. 1980; Coultas et al. 1994) demonstrated that intensive occupations were strongly influenced, if not fully determined by, geographic factors. It is widely acknowledged that settlement densities were high in the well-drained areas of the region and that distributions are related to Maya farming choices, suggesting a wide diversity in agricultural pursuits (Adams et al. 1980; Coultas el al. 1994; Cowgill 1962; Dunning 1992, 1994; Fedick 1989, 1994; Fedick and Ford 1990; Gliessman 1983 Harrison 1990; Mazzarelli 1976; Miksecek 1991; Pohl 1990; Sanders; Voorhies 1982). These data have been used to measure settlement densities and as a proxy for population and land use.

On the low end, population estimates for the ancient Maya ranges from 3 to 9 times greater than contemporary densities of 10-25 persons per sq km (see Culbert and Rice 1990). Suggested densities for major centers such as Tikal and Caracol have been set at c. 1000-2000 people per sq km (Culbert and Rice 1990). Further, calculations of annual growth rates have been suggested to be as great as 2.5% (cf. Adams1996; Chase and Chase 1995) similar to the fastest growing nations of Africa today where populations double every 20-30

years (Population Reference Bureau; UK Government). These numbers do not correspond to comparable pre-industrial settings and are greater than modern Japan, China and India (Boserup 1981).

It is universally acknowledged that the archaeological record is incomplete. While there are many reasons for this to be true, the foremost among them are: archaeology's bias toward research on the largest settlements; the difficulty of exploring the isolated settlement sites of largely forested region; and the lesser likelihood of survival of smaller settlements. If we wish to interpolate the whole patterns from our partial foundation, we need to consider the potential of statistical probabilistic spatial modeling. We initiate a test of the predictive model for the patterns of Maya settlement using the GIS at one geographic scale: the local 1:50,000 scale (Figure 1). We use the weights-of-evidence method to convert maps for the examined area into probabilities of settlement using known archeological sites. Field data were collected to validate the model.

The Geography of the Maya Forest

The Maya forest region is characterized by rolling limestone ridges (Turner 1978) covered by a deciduous hardwood forest. This verdant jungle thrives on an annual rainfall of 1000 to 3000 mm that falls mainly from June to January. The dry-season runs from January to June. Activities today are impacted by this wet/dry seasonal deluge and drought sequence, as they were in the Maya prehistory (Ford 1986, 1996; Fedick and Ford 1990; Lucero 2002; Haberland 1983; Rice 1993; Scarborough 1998). Today the area remains mostly forested, including the Maya Biosphere Reserve, but both slash-and-burn and commercial farming are pushing the development frontier inland and into the margins of the protected areas. About 85% (30,000 km^2) of the Peten of Guatemala was, until recently, covered with semi-deciduous subtropical moist forest of which less than 50% now remains. Land clearing often reveals the location of archeological sites, and leads to their destruction by erosion, looting, and over plowing. While the larger sites are developed for tourism, and some rank among the greatest existing views of the ancient world, the impact of ecotourism and conservation have been slight in comparison to the agricultural extensions.

Mapping of archaeological sites is incomplete, and varies by country, yet a surprising amount of GIS data can be accumulated from existing sources and surveying agencies. What is clear is that during the Late Classic Period (AD 600-900), the number of inhabitants of the region as a whole was greater than that of today, with no difference in resources or climate. The settlement and land use pattern, however, was far from uniform over the landscape. What are the underlying associations creating the distribution?

A composite mosaic of regional land resources underwrites the foundation of Late Classic Period settlement distribution and intensity in the Maya forest. Settlement densities were the highest in the well-drained ridges across the region (Fedick 1989, 1992; Fedick and Ford 1990; Ford 1996, 1991; Puleston 1973; Rice 1976 see Bullard 1960, 1964). Ridge lands are concentrated in the interior (Turner 1978) and are characterized by shallow, fertile, mollisol soils of excellent quality (Dunning 1996; Fedick 1988, 1989, 1995), representing only 1% of the world's tropics yet up to 50% of the Maya forest. These soils are superior for hand cultivation methods but are inappropriate for contemporary industrial methods (Jenkins et al. 1976), which relate to the conservation risks in the region today. Thus today's most productive farming areas are almost a spatial compliment of the Maya's.

The well-drained soil zones preferred

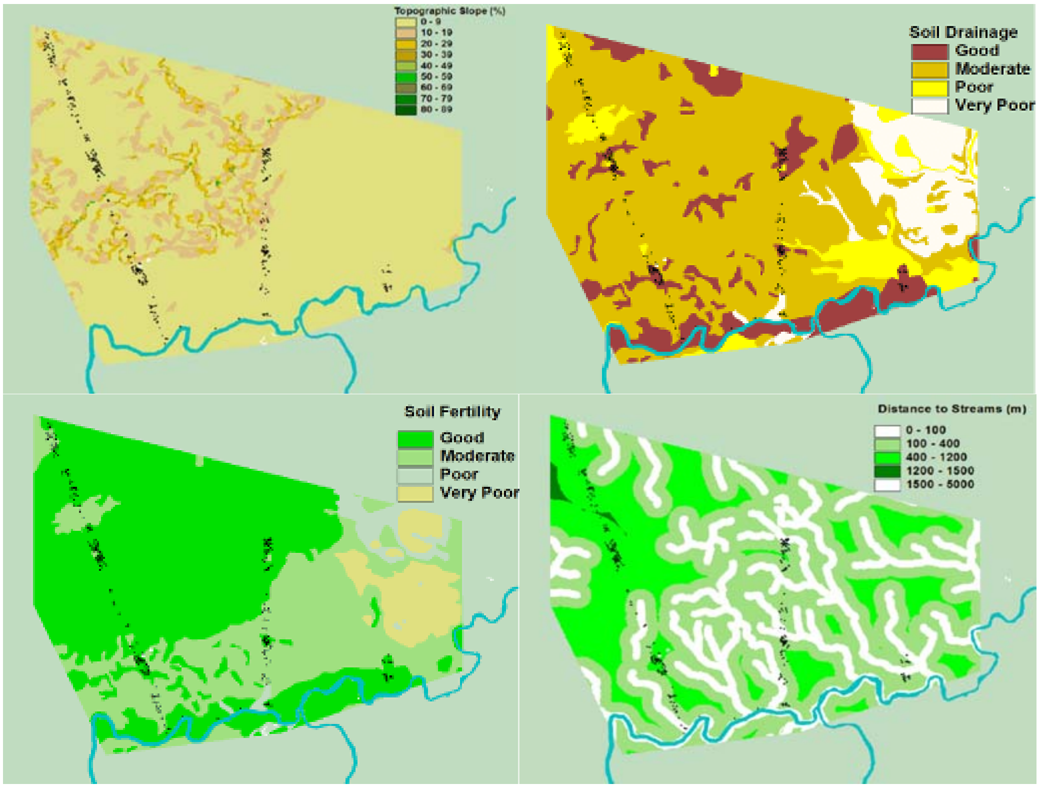

Figure 2: Geographic evidence for the initial predictive model test

for Maya settlement are unevenly distributed across the region, resulting in dispersed settlement patterns (Ford 1986; Ford 1991a, (Culbert and Rice 1990; Sanders 1981; see also Freidel 1981). There is a distinct relationship between the availability of well-drained ridges, settlement density, and the regional Maya hierarchy (Fedick and Ford 1990; Ford 1994, 1996, 1998). This is evident in the local settlement around El Pilar, where extensive field work and settlement surveys have taken place (Fedick 1988; Ford et al. 2000, 2001; Kamp and Whitacre 2002).

There is ample evidence that the greater Peten area around Tikal dominated the region in the Late Classic Period, AD 600-900 (Coe 1965; Culbert et al. 1990; Fedick and Ford 1990; Ford 1986, 1990; Martin and Grube 1995; Haviland 1972; Mathews 1985; 1991; Marcus 1993, Jones 1991; Chase and Chase 1992; Culbert 1991; Schele and Mathews 1991). During this time period, Maya settlement expansion and construction was at its maximum (Abrams 1994; Andrews 1977; Wernecke 1994). Yet Maya cites do not fit traditional notions of urbanism (Ashmore 1991; Bacon 1976; Duncan 1987; Graham 1996; Hardoy 1964, 1968; Haviland 1969; Kubler 1958; Marcus 1983; Sanders and Webster 1988; Wilford 2000), suggesting a value for "green space" that would allow for a more forested landscape (Graham 2003). Even visual metaphors expressed values they placed on nature (Peterson 1983, 1990, Towsend 1992). Jaguars (Benson 1997; Houston and Stuart 1989; Saunders 1989), three species of monkey including the Capuchin, now locally extinct (Baker 1992), and cacao (Peterson 1990) figures prominently in Maya art and iconography. The presence and pervasiveness of these animals, as well as a myriad of water loving creatures (Solari 2002) have habitat implications for the Maya forest in ancient times.

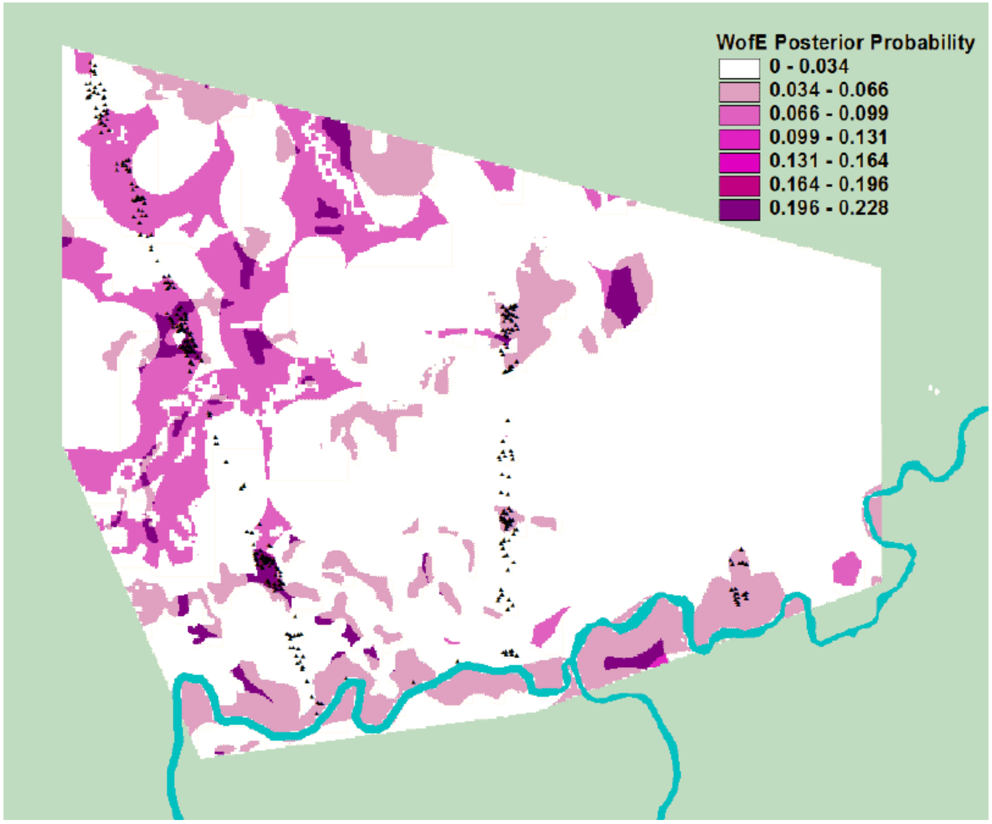

Figure 3: The BRASS area predictive model

Many scholars focus on the dramatic Classic Maya and the search for the causes of the collapse has generated a substantial literature (e.g., Culbert 1973, 1988; Culbert and Rice 1990; Dunning et al., 2002 Redman 1999). Regardless of the causes, the evolution of social complexity of the Maya were founded in gradual rise in population and concomitant land use intensification, including farming of marginal land (cf. Fletcher 1995; Boserup 1965, 1981; Cohen 1977; Stone 1996). Early investments in settlement development also endured over time. This centralization process integrated the populations over a span of more than 1700 years, based on the development and management of the assets of the Maya forest (Fedick 1996; Ford 1990, 1998; Ford and Rose 1995; Graham 1987; Sanders 1977; Pyburn 1996; McAnany 1989). Environmental dimensions constrained subsistence strategies and cultural developments mediated those constraints (Fletcher 1995). The result was clearly one of agricultural diversity to sustain the evidence of steady growth of Maya civilization, and reflecting considerable adaptation to the environment, including the development of robust strategies to survive periods of disturbance, such as hurricanes and drought.

Throughout the entire Maya sequence, there are a series of environmental factors that have been identified and interpreted through geological, paleoecological, tephrochonological, archaeological, and historical sources (e.g. Deveey et al 1979; Andrews and Hammond 1990; Espindola et al 2000; Beach 1998; Jones 1998; Schwartz 1990). For example, volcanic eruptions and intensity of volcanic activity in Mesoamerica is of particular interest in the evaluation of environmental inputs as local impacts (Sheets 1992) and ability to distribute large amounts of volcanic ash to stratospheric levels (See

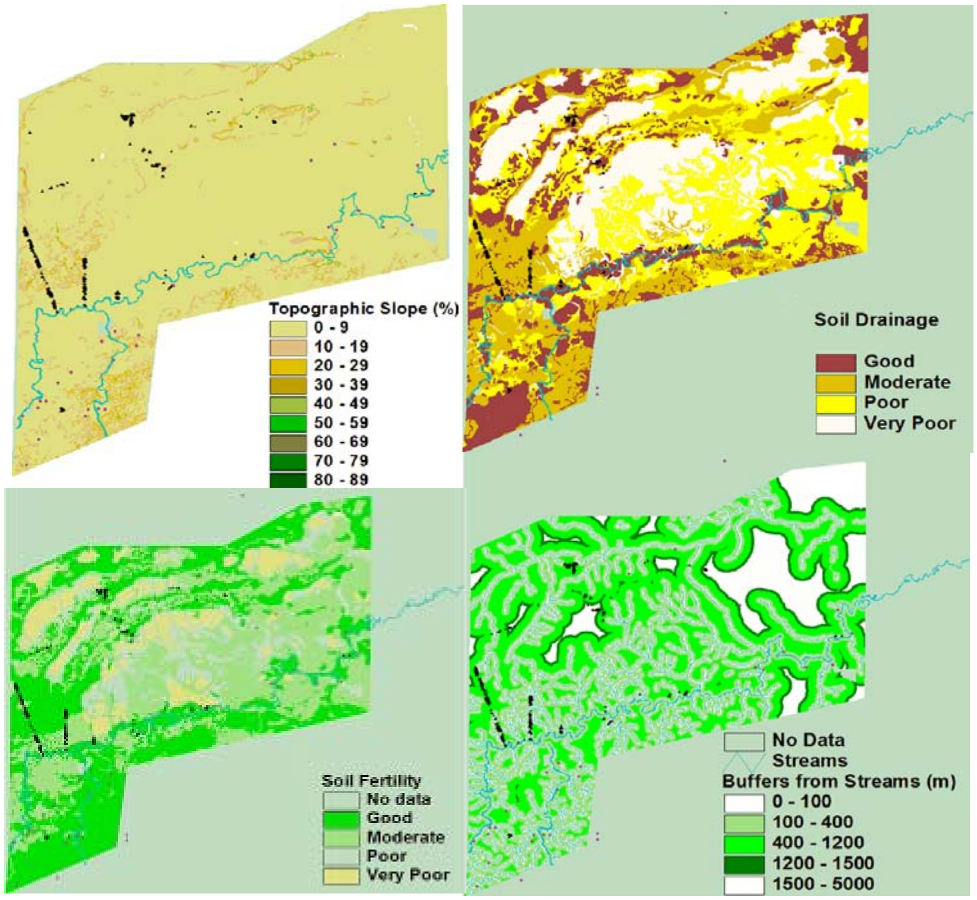

Figure 4: the evidential geographic themes for the great Belize River area

Drexler et al 1980; Espindola et al. 2000; Rose et al. 1999; Sarna et al. 1981) have distinct impacts (Ford and Glicken 1987, Ford and Rose 1995; Voorhies and Thomassion 1979), particularly in the Late Classic Period.

It appears that regional settlement distribution and density are related to land use intensity through 900 AD (see Fletcher 1995; Boserup 1965, 1981; Stone 1996; Turner 1990; Johnson and Earle 1987). Regional land use patterns hold constant at the local level, as seen in the Belize River area around El Pilar (Fedick 1988, 1989), yet have not been rigorously tested. The influence of subsistence and relative impact of cultural dimensions should be most pronounced at the local level, yet testable data at those scales are scant (see Fedick 1989). Despite the evidence of high settlement densities in the past that would be based on a long sustained land use strategy, little effort has been made to identify the balance that was attained by the ancient Maya pattern. Instead, modern industrial strategies are proposed that bear no resemblance to the past and can be seen as destructive short-term trajectory in process (Sever 1999; Turner 1990). The success of the past strategies, the needs of contemporary local populations, and the conservation demands underscore the imperative to understand the past success of Maya agriculture.

Weights-of-Evidence Analysis

The premise of our model is that the unknown map of Late Classic Maya

settlement distribution consists of a set of unknown locations that are a subset of known locations where archeological surveys have located settlements. While the actual distribution cannot be known, it can be modeled probabilistically. The settlement distribution is assumed to spatially reflect mapped distributions of major environmental features. Among these are topographic slope, soil fertility, soil drainage, and proximity to water bodies. These factors each contribute independently to the location of all settlements, but in different amounts. These amounts, or weights, are the basis for the use of Weights of Evidence (WofE) analysis (Monts-Homkey 2000; Ford and Clarke 2001, Raines 2002; Sijean 2003; Monthus 2004). *WofE* origins are in mining geology (Bonham Carter 1999). The essential tools have been integrated into a GIS software package, ESRI's ArcView 3.2 (Kemp et al. 1999; Raines et al. 2000), and extended into a broader analysis package called ArcSDM.

WofE analysis follows six steps: (1) select known points of some feature such as farming sites that are to be modeled; (2) select thematic maps that contribute to the explanation of a distribution; (3) using the correlation analysis tools of *WofE*, convert selected map layers to binary or categorical form; (4) test for conditional independence comparing prior and posterior probabilities by class combinations, eliminating those maps which do not contribute explanatory power; (5) create a set of weights to use for each layer using Bayesian methods; and (6) develop posterior probability and the associated uncertainty maps using the weighted layers (Bonham-Carter 1994; Raines 1999). The probabilities can then be used as environmental weights in a settlement simulation.

Any model is only as good as its ability: (1) to be calibrated and validated to reflect past and existing data; (2) to summarize and simplify a real system so as to allow experiments and test hypotheses; (3) to allow aggregate investigations that would not be possible by testing parts in isolation; and (4) to be transportable. Our *WofE* model is designed to allow us to predict where to expect and not expect Maya settlements, allowing an independent means of validation. The model allows us to see the relative importance of environmental factors in Maya settlement location choices. It also allows cross scale comparison of the weights. While the actual application is not directly transportable since the weights are derived for each case separately, the approach is applicable universally and the posterior probability layer can be input into further models.

In practical terms, each result map is converted into two or more categories. Of the numerous soils classes on the ODA survey of the Belize Valley (Jenkin et al. 1976), for example, each was condensed into characteristics of drainage and fertility weighting of good, moderate, poor and very poor, for four categories. The number of categories for a more continuous variable, such as percent slope, can be determined using the software and some simple measures. *WofE* then combines layers and categories spatially and determines which points in the evidential theme (in our case, archeological sites) fell inside and outside of the regions on the map. The weights are computed both as layer/class contributors to a distribution and the opposite, i.e. they “repel” the evidential theme. Positive weights ($W+$) reflect the possibility of the presence of sites if the class is present. If the positive weight is positive ($W+>0$), in the presence of the class or theme, we will find more sites than chance would determine. If the positive weight is negative ($W+<0$), then presence of the class or theme, means fewer sites than what the chance would determine. If $W+$ is equal to zero, the class does not influence the location of, it is not an evidential class, and should be excluded from the model. Negative weights ($W-$) are the complement: if the negative weight is

Theme	Scale and Extent	Map Source	Resolution	Classification	Transfor m
Soil Fertility	Belize River Valley	Digitized paper map- Jenkin et al. 1976	1:50,000 vector	4 classes	4 classes
Soil Drainage Capability	Belize River Valley	Digitized paper map- Jenkins et al. 1976	1:50,000	4 classes	4 classes
Topography	Belize River Valley	Paper official topo 40 meter Belize data	1:50,000vector	40 meter contours	DEM
Rivers and Streams	Belize River Valley	Paper official topo 40 meter Belize data	1:50,000 vector	Perennial and Intermittent streams	Buffers 400m
Lakes and Water Bodies	Belize River Valley	Paper official topo 40 meter	1:50,000vector	all	Buffers 400m
Archaeologic al Sites	Site	BRASS surveys	1:2000 vector	Major/minor, center, house sites Inconsistent nomenclature	1 class

Table 1. GIS Data employed in the Predictive Modeling of Ancient Maya Settlement

negative (*W-<0*), the class is a good negative indicator while if (*W->0*), that would expect that the absence of the class or theme, we will find more sites than what the chance would suggest. Contrast is the difference between the positive and the negative weights (C = W+-W -) and is a measurement of the correlation between a particular theme and the training points, in our case the known archeological sites. If contrast for a theme is high, then that theme in general is a good predictor. Weights are log ratios of conditional probabilities.

The *WofE* software allows computation of a table of class weights, the contrast, and an estimate of the variance of the contrast. This allows statistical tests of significance of the evidential themes, allows the computation of uncertainty, and permits trial and error testing of classes and layer combinations to build stronger models. A final output is the sum of the posterior probabilities for all contributing classes and layers, in the form of a map showing their spatial distribution.

UCSB Maya Forest GIS

Our research began with identifying a need to build a method to incorporate the collection, integration, harmonization, preservation, and distribution of the scattered environmental and settlement data from the Maya forest region. The result was the UCSB Maya Forest Geographic Information System (GIS), a data repository for the greater Maya forest region of Belize, Guatemala, and Mexico. Data contributed by agencies and scientists have been combined into a regional GIS (Ford and Clarke 2000) and encoded with Federal Geographic Data Committee standard metadata for archiving and redistribution via the Alexandria Digital Library (Smith and Frew 1995), and now available through the

ADL (2005).

The original compilation on CD (2000) was based on the GIS developed at the regional scale by the Paseo Pantera Consortium for the US Agency for International Development. Integrated with this is a digitized maps of topography and soils, Sader's (1999) land use data for the Petén, geo-referenced MSS satellite images, the local GIS database developed by Fedick on soils (1989) for the Belize River area (topography, soils, geology) as well as settlement data of Ford' BRASS project (1983-2003), and a 1998 1:6 000 photo-mosaic of the El Pilar Archaeological Reserve for Maya Flora and Fauna (Girardin 1999). This first version (UCSB Maya Forest GIS 2000) has been shared with collaborators in Belize and Guatemala, and published on the Internet by the SCS Belize Country Conference (Ford and Clarke 2002). A key recent addition has been 90m-resolution digital topography from NASA's Shuttle Radar Topographic Mapping program. Many of these data provided the input weighting layers for the weights-of-evidence modeling.

The Data, Geographic Methods, and Procedures

From the numerous data contained in the GIS, a subset of environmental data layers were extracted and clipped to the various study zones. The input layers selected at the local scale and extents are listed in Table 1. We combine traditional archaeological field research data with new geographic predictive methods using weights-of-evidence *WofE* approaches. Environmental components of the settlement location model include soils, geology, topographic variables, and surface hydrology as independent environmental layers with their spatial transforms, such as buffers. These environmental layers will be combined with known archaeological Maya settlements from the BRASS surveys as actual locations for the analysis. The strength of associations that the model will provide will help to assess environmental contributions to settlement patterns and can be evaluated against cultural factors, such as location of civic centers and settlement exclusion areas, to provide a map of settlement and environmental relationships.

Settlement Patterns: By the Late Classic, all the well-drained uplands should evidence high settlement, resulting in dispersed patterns. Occupation is found in many zones and the influence of several geographic variables is present. Evaluating the dependence of known settlement sites on the fundamental geographic variables constraining farming, we can assess the importance of farming in explaining Maya land use patterns. We use the data base from the BRASS survey transects as the evidential theme for Maya settlement. With the statistical probability model we develop a basis for predicting Maya settlements. Detailed field validation and re-examination at the local scale has enhanced the predictive settlement base and provide the foundation for our model.

Distribution of Water, Slope, and Soil:

Given continuity in climate regime and geology, the major impact on the environment is human land use. The ancient system of agriculture depended on rainfall. Manipulations of landscapes were oriented toward minimizing limitations. Consequently, where lands may be consistently wet, there have been drainages recorded. Where the land is too steep terraces are noted. The porous limestone of the Maya forest leaks water to subsurface aquifers. Since annual rainfall distribution is seasonal, agricultural and land use cycles will respond to these constraints. Slope is also a consideration in the sighting of settlements. Most of the settlements will avoid areas that are consistently wet or steep. For the farming settlements, soil quality is a major issue. Overall characteristics of fertility are critical for

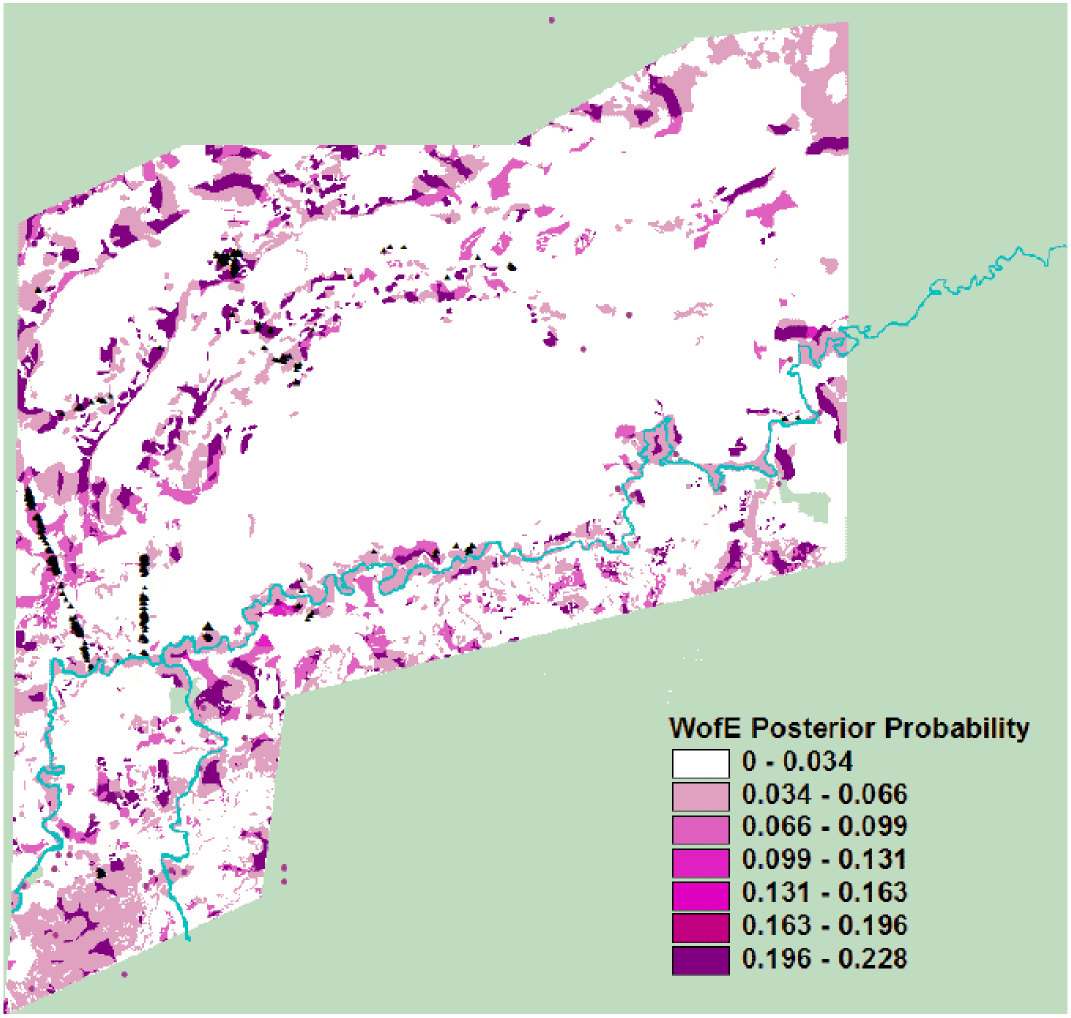

Figure 5: The predictive model for the Belize River area.

domesticated crops and issues of drainage qualities influence the ability of specific plants to respond to variations in rainfall. For the local scale, we focus on spatial distributions of water and soil, along with topography to associate with Maya settlement distribution

Modeling Ancient Maya Patterns

The UCSB Maya forest GIS is our modeling base for examining the ancient Maya landscape in relationship to the settlements of Late Classic Maya. We assess land use hypotheses presented in the vast literature on the Maya with the GIS, using tools available in standard GIS packages such as ArcView and ArcGIS. We will simulate the actual spatial distribution using landscape weighting factors developed in our work using Weights of Evidence (WofE) analysis (Ford and Clarke 2001, Raines 2002; Sijean 2003; Monthus 2004). Gary Raines, who helped build the ArcView extensions for *WofE* analysis (Raines et al. 2000) has worked on the Columbia River Basin Ecosystem Management Project (Raines et al. 1996, Raines and Johnson 1996; Raines and Smith 1996) and in the development of GIS data standards (geology.usgs.gov/dm/). Raines has collaborated extensively in our *WofE* predictive modeling to the Maya forest, and is willing to continue this collaboration.

The initial tests were conducted with

the BRASS study area of three settlement transects covering the western end of the Belize River area. The settlement data are representative of the western uplands and the eastern valley. The El Pilar transect provides a sample of the densest settlement areas associated with the major center. The Yaxox transect flanks the well-drained uplands and includes areas of the marl foothills, similar to the greater Spanish Lookout area. The eastern Bacab Na transects provides a sample of the alluvial valley similar to the area of Barton Ramie with unoccupied savanna to the north. The BRASS area served as the source of the first examination of the dependent geographic variables of slope, soil fertility and drainage, as well as distance to water bodies. These are the significant variables contemporary farmers use in the location of cultivations and are known worldwide to influence agricultural investment.

The four independent variables were classified with the aid of the *WofE* model and the graphic image of each variable is shown in Figure 2. The *Weights of Evidence WofE* program builds each theme individually, weighting them based on their distribution. The cumulative combinations of each then are weighted against each other for their contribution to explaining the dependent variable, in our case Maya settlement. This formed the foundation of our investigation and the basis of our results.

Methodology

The results of our investigation of the predictive model have proven illuminating, supporting the view that agricultural strategies are at the foundation of Maya development. We developed the geographic themes of topography, soil drainage, soil fertility, and distance to water bodies for the test area of the BRASS surveys. For the initial test a random sample of 50% of the known sites are used. This sample is used to predict the remaining 50% of actual sites. The evidential themes are presented in Table 1 and represent the independent variables in the predictive model. Using the random sample, the *WofE* program generated the predictive model by combining the weights and prioritizing them statistically for the model. Then the results of the samples are generated as visuals for comparison to the whole (Figure 3). Comparing the random sample to the whole of the settlement data we found that we could predict 75% of the settlements for the BRASS area. Then the test case was expanded to the whole Belize River area.

The model was then applied across the Belize River area (Figure 4) and the *WofE* model was propagated based on the results of the test case (Figure 5). The results were then field validated for verification and to calibrate the model. This involved travel to target destinations across the study area with a GPS and mapping residential sites where found. Travel on rural roads throughout Spanish Lookout, south of Soccutz and Benque Viejo, and into the north of the El Pilar area provided a number of cleared areas for survey and recording of residential sites. Data were collected from the 2003 and 2004 seasons and used for the validation of the expanded model. The results of the field verification provided added sites for the model, independent corroboration of the model and an increase in predictive confidence of 80% (Monthus 2004).

Results and Conclusions

Our results point to the singular importance of smallholder farmer choice in the selection of residential settlement. While all geographic factors were contributors to the model, we discovered that:

- The predictive model explains 75% of settlement locations from the study area and 80% for the local area as a whole
- For water bodies: eliminated lakes, Strahler order, Belize River as contributory factors verified importance of streams important up to 400m

- Validation with GPS field data
- Provided a basis for extending model to regional data for the whole Maya area

The selections for farming sites is associated with a combination of attributes that point to intensive cultivation of the forest as a garden, comparable to traditional farmers in the region today. This provides a link from the ancient Maya settlement pattern and land use to the contemporary forest gardeners whose hand cultivation of unplowed tree dominated plots conserve soil productivity, retain water, promote biodiversity, and support the requirements of birds and other animals. The traditional forest garden techniques provide a basis for understanding the Maya settlement patterns that strive to maximize access to a variety of good agricultural areas and vary the intensity of land use across a wide area. The different land use areas provide alternative zones for open sun drenched poly-cultivated milpas to shaded tree orchards with understory cover crops and emergent palms. Future work will explore the nature of the settlement distribution with an effort to develop population estimates and model thresholds of land use intensity that could contribute to the Classic Maya collapse.

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14 THE WATER LILY SERPENT STUCCO MASKS AT CARACOL, BELIZE

Reiko Ishihara, Karl A. Taube and Jaime J. Awe

Water has received scholarly attention in the Maya area due to its importance as a vital resource, its iconographic prevalence, and its religious significance. This paper will examine the Water Lily Serpent as a distinct deity and its architectural manifestation as water temples, with a particular emphasis on Caracol, Belize. We focus on the stucco facades of Structure B5-sub, which were exposed and consolidated by the Tourism Development Project. We argue that these stucco masks represent the Water Lily Serpent and that they are part of a more widespread pattern found throughout the Maya area. The Water Lily Serpent signifies standing water and is also associated with the concepts of earth, abundance, underworld, and may be symbolic of the primordial sea. The occurrence of the Water Lily Serpent on monumental architecture indicates that this deity played an important ideological and political role

Introduction

As a basic component of survival, water is a primary concern and integral part of any society. The Maya area is no exception to this rule, and scholars in this sub-region of Mesoamerica have spent considerable effort addressing the paradox of large populations in areas with limited surface water sources, particularly in the Northern Lowlands. This concern is further highlighted by ethnographic studies which have noted the religious significance of water and the establishment of deities and rituals related to this basic human need (e.g., Redfield and Villa Rojas 1934; Vogt 1976). An excellent example of the above is the association of water-related icons with religious ideology.

In this paper, we will examine the iconography of the stucco façades that flank either side of the central staircase of Structure B5-sub at Caracol. We suggest that the masks represent the Water Lily Serpent, an important but little studied deity. These masks identify the building as a water temple, which is part of a more widespread pattern throughout the Maya area. We will briefly review the significance of the water lily as a symbol in Maya iconography and discuss the implications the water temple may have had within the context of the site at Caracol.

The Water Lily Motif in Maya Iconography

The water lily is a common motif depicted on various forms of media, including ceramic vessels, stone monuments, stucco façades, and mural paintings. One of the first researchers to identify water lilies in Classic Maya art was Herbert Spinden (1913:18-20, 65, 77, 135), who noted that this plant was identified with both water and the jaguar. In addition, Spinden (ibid:18-19) suggested that it was placed on "the heads of divinities that are probably associated with water." In other words, the water lily serves to denote aquatic deities. The water lily may be illustrated in the background of scenes, on the body of witz zoomorphs, in conjunction with jaguars, or as an element of a complex headdress with a knotted lily pad and fish, the latter of which will be the focus of this paper. The water lily is briefly described by Miller and Taube (1993:184): One of the more lovely flowering plants of Mesoamerica, the water lily (Nymphaea sp.) grows in relatively still waters such as ponds, lakes, and slow-moving rivers. These conditions correspond well to the humid Maya lowlands, and it is thus not surprising that this plant abounds in Classic Maya art. In Maya iconography, the water lily frequently denotes standing water, including the surrounding and sustaining sea. Perhaps because of its almost miraculous emergence out of the still water, the water lily may have served as a model for the creation of the earth.

Schele and Freidel (1990:417) point out that the word for water lily is naab',

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homophonous with words for “lake,” “swamp,” and “river,” and note that water lily bands are often used to denote these bodies of water. An outstanding example appears in a recently discovered mural in Group A of the North Acropolis at Calakmul (Carrasco Vargas and Colón González 2005). Extending roughly 200 meters, a banquete and its backing wall feature brilliant murals portraying water lily bands with water lily flowers, aquatic birds and other water motifs. The contemporary Yukatec and Classic Mayan term for ocean is k’ak’naab’, in which k’ak’ is the term for “fire.” Perhaps this curious combination of fire and water alludes to the brilliant reflections of the sun atop the surface of the sea. Water lilies may also refer to agricultural canals as standing bodies of water (Schele and Miller 1986:46).

The water lily pad is often marked with a net-like pattern which coincides with Classic Maya depictions of turtle shells (Miller and Taube 1993:184). The earth’s surface is often shown as the carapace of a turtle, and the overlapping iconographic depiction with the water lily pad suggests similar meanings. Witz heads, or the anthropomorphic depiction of “hill/mountain,” are often shown with naab’, or water lilies, as their eyes. Water lilies are associated with the underworld, the surface of the earth (Thompson 1950:279), and the primordial sea (Schele and Miller 1986:304), and hence with concepts of the earth and abundance.

According to Thompson (1950:72-3), the Imix glyph, the first day of the Maya twenty day names, derives from the water lily blossom. Thompson (1970:220) subsequently related the day name Imix with its Nahuatl counterpart, Cipactli, the earth crocodile, further strengthening the association of earth, water, and the concept of abundance with Imix, and the water lily. Crocodiles are frequently illustrated with water lilies on their bodies (e.g., Copan Altar T), which further exemplifies the symbolic connection between the water lily, crocodile, earth, and water.

The Water Lily Serpent

Nicolas Hellmuth (1987) was one of the first researchers to systematically describe the attributes of the Water Lily Serpent. Diagnostic traits of the Water Lily Serpent consist of a serpent body and an avian head closely resembling the Principal Bird Deity, the Classic Maya form of Vucub Caquix. In addition, the body often has feathers, recalling the plumed serpent of Central Mexico. A diagnostic marker of the Water Lily Serpent is a headdress displaying a water lily pad and flower, with the stalk of the water lily blossom bound across the pad. The water lily pad is rounded with a bumpy outline of widely spaced knobs or continuous scallops. In addition, the surface of the pad is usually marked by the same undulating cross-hatching markings depicted on turtle carapaces, bone, flint, and bat wings. Quite frequently, a fish nibbles at the central flower, and fish also appear biting the tail of the serpent. At times, the entire headdress assemblage is replaced by a large water volute, denoting the aquatic significance of both the headdress and the serpent. Another aquatic supernatural, the Oyster Shell Dragon (also known as the Shell Wing Dragon) is often perched atop the Water Lily headdress. The Oyster Shell Dragon is of considerable antiquity, and appears on an elaborately incised Olmec statuette (Taube 2004:51).

Although unknown in Olmec art, the Water Lily Serpent appears in the Maya region as early at the Late Preclassic period (100 B.C. – A.D. 100). The earliest depiction of the Water Lily Serpent deity appears in the recently excavated mural from the west wall of Pinturas Sub-1 at San Bartolo, Guatemala (Saturno et al. 2005). In this scene, a human figure with the head of the Water Lily Serpent and the rain god Chaak flank the dancing maize god. All three figures are in the carapace of the earth turtle, which appears in the form of the quatrefoil cave motif. Whereas *Chaak* embodies celestial rain, the Water Lily Serpent symbolizes terrestrial water, including rivers, lakes, cenotes and the sea.

In Late Postclassic Central Mexico, there were two major gods of water, Tlaloc, the embodiment of celestial rain, and Chalchiuhtlicue, the goddess of terrestrial bodies of water, such as lakes, rivers, and the sea. In Classic Maya epigraphy, the Water Lily Serpent occurs as the head variant for the coefficient of thirteen and the personified form of the 360-day tun period. Early Classic examples of the Water Lily Serpent tun sign appear on the Leiden Plaque and Yaxchilan Lintel 48. As in the case of the earlier San

Bartolo example, both tun heads are topped with water scrolls. Depictions of this deity are common on Classic period polychrome vessels, and also appear on many stelae at Machaquila, in the Petexbatun region of Guatemala.

At Machaquila, no less than five monuments portray rulers dressed as this being, in almost all cases atop versions of the quatrefoil sign containing the water lily flower sign denoting HA', or water (see Graham 1967:Figures 49, 51, 57, 59, 61). In the case of Stela 10, the head of Chaak substitutes for the water glyph. Noting that the quatrefoil water sign serves as the toponymic sign for Machaquila, Stuart and Houston (1994:33-36) also point out that the central plaza at Machaquila also contains a large, stone-lined quatrefoil depression, similarly to the same feature in the monumental art and texts.

In some instances, the Water Lily Serpent carries a brush-like object, possibly an aspergillum for dispensing water. On La Mar Stela 2, five individuals impersonating the Water Lily Serpent are holding aspergillums, one of which is clearly dancing. These figures probably embody the waters of the four quarters and center of the world. Water, specifically suhuy ha' from caves, is a key element in ceremonies for ritual purification, and is noted for the Yukatek Maya that "native priests consecrated an area by scattering water from a serpent-tailed aspergillum" (Miller and Taube 1993:184) whose water was collected from dew on leaves or from *suhuy ha'* in caves or cenotes.

The Water Lily Serpent also occurs at Early Postclassic Chichen Itza. Murals from the Upper Temple of the Jaguars feature blue basal water bands containing the head of the Water Lily Serpent, surely a portrayal of terrestrial water (see Taube 1994:Figure 1c). A fascinating example of the Water Lily Serpent appears as a name glyph in the elaborate procession scene carved in the Lower Temple of the Jaguars (Figure 1). In this case, the cranium of the creature is a water-filled basin with emerging water lily flowers, much as if the deity was a personified cenote. Versions of the Water Lily Serpent also appear in the Late Postclassic Dresden Codex (1983; Taube 1992). On Dresden pages 35b and 36a, the deity is conflated with Chaak, recalling the pairing of the Water Lily Serpent and Chaak at San Bartolo and on Stela 10 at Machaquila.

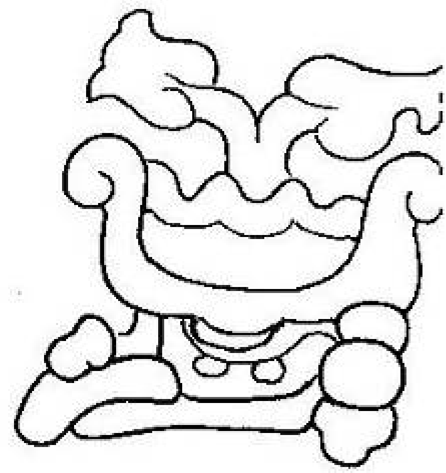

Figure 1. Glyph from the Lower Temple of the Jaguars at Chichen Itza, showing the top of the head as a pool with water lily flowers.

Our discussion so far centers on the iconographic depictions of the Water Lily Serpent. Is there evidence of this deity in the ethnographic record? Indeed, there is a snake being who resides in standing waters, resembling the Water Lily Serpent. According to Wisdom (1940:392), the most important god of the Ch'orti' Maya of Guatemala is the Chikchan, the "King Serpent," who is responsible for producing rainstorms, floods, rainbows, thunder, lightning, and earthquakes. The Chikchan is "both one and innumerable," a ubiquitous being who exists in both sky and earth realms. The earth Chikchans are said to live at the bottom of lakes in the mountains and in the sea and all the lakes. They follow the streams into the hill when the dry season approaches, and when the rainy season comes, they enter the streams causing the streams to swell. The Chickcans being functionally overlaps with the Chaaks, but the fact that they inhabit lakes, seas, streams, and the interiors of hills give the Chikchans a particular significance which may relate to the Water Lily Serpent. Furthermore, David Stuart has suggested that the Classic-period Nohkan is the counterpart to

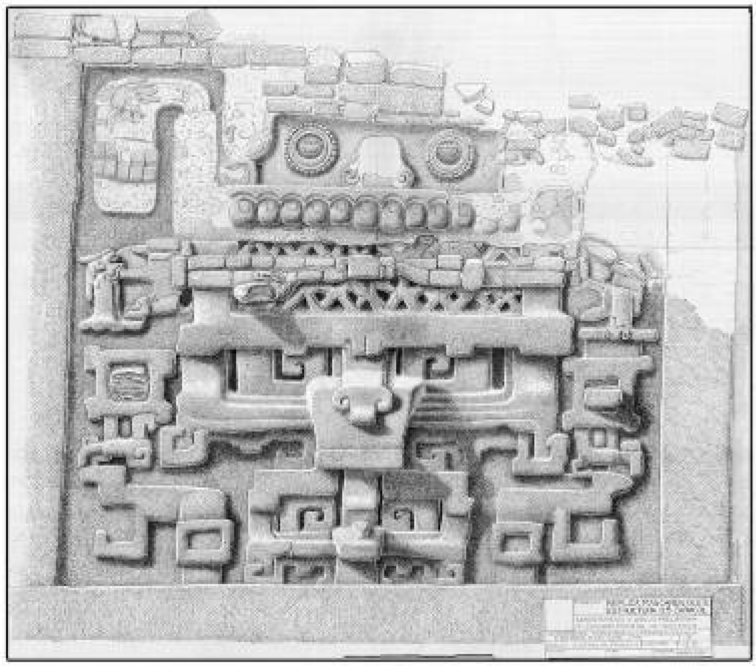

Figure 2. Illustration of the west masks on Structure B5 and B5-sub, Caracol. Note the top Tlaloc mask is part of the terminal architectural phase, and covers the very upper portion of the underlying Water Lily Serpent mask. Drawing by the Tourism Development Project.

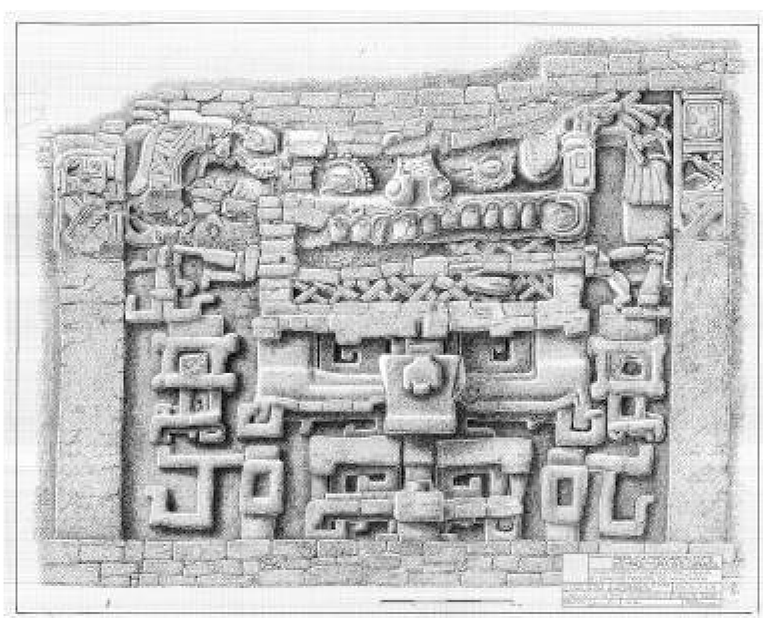

Figure 3. Illustration of the east masks on Structure B5 and B5-sub, Caracol. Drawing by the Tourism Development Project.

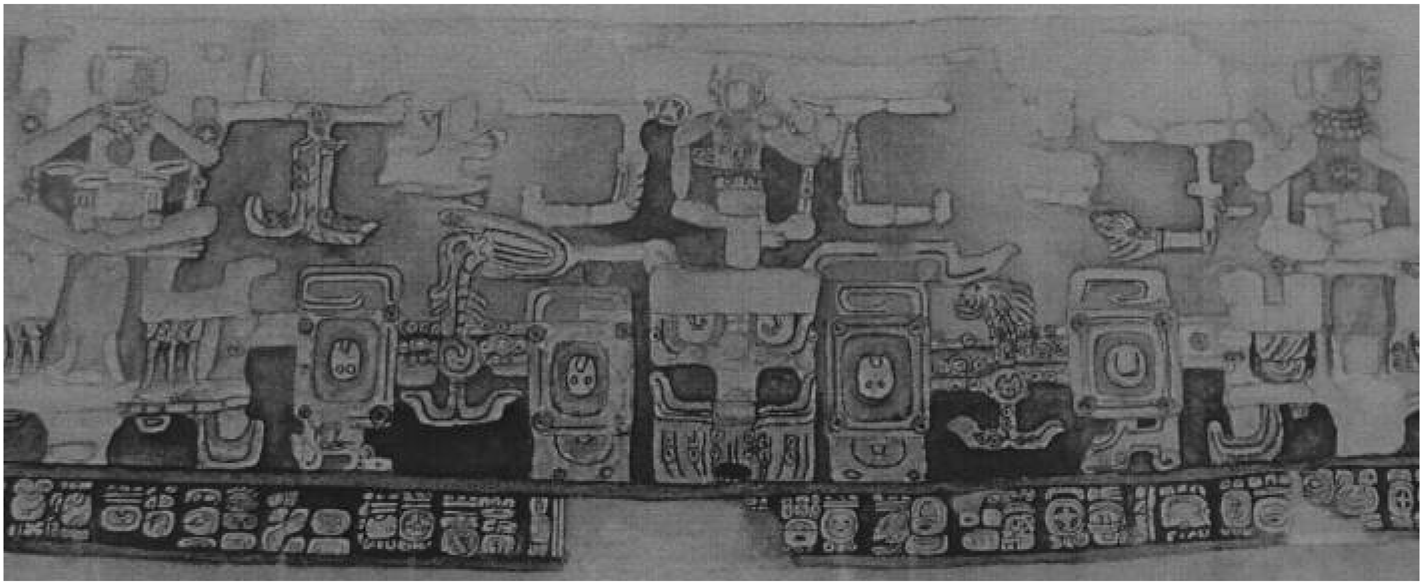

Figure 4. Watercolor rendering of the mask on Structure B16-sub uncovered by Drs. Arlen and Diane Chase. Illustration is a photograph taken of the drawing on display at the Caracol Museum.

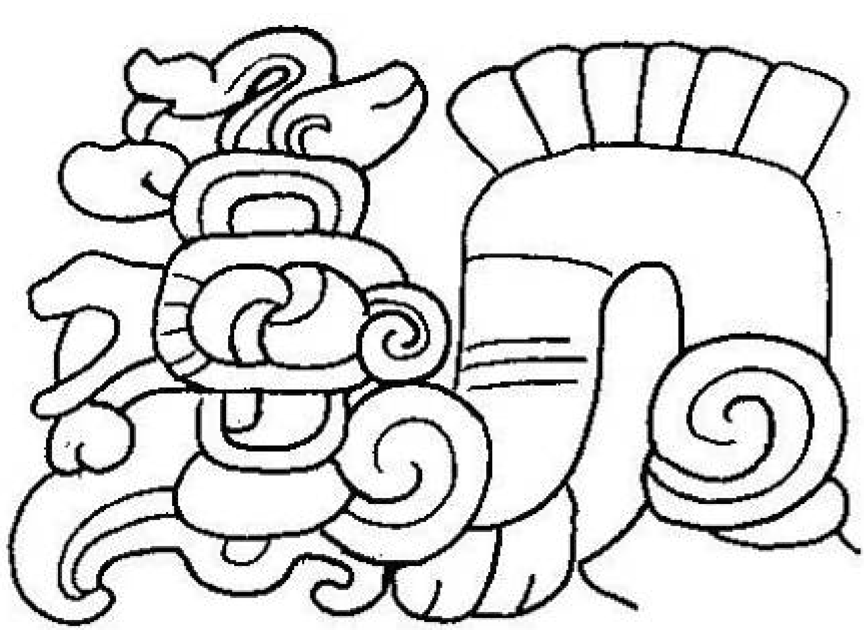

Figure 5. Illustration of the earliest portrayal of the Water Lily Serpent as the tun sign on the recently discovered, upper portion of Stela 20, Caracol. Drawing by Karl Taube.

Chikchan and that the Water Lily Serpent may be identified as Nohkan, Great Serpent.

Stucco Façades of Structure B5-sub at Caracol

The site of Caracol has a number of examples of the Water Lily Serpent. Two decorate the façades of Structure B5 on the west and east sides of the central staircase and were discovered by the Tourism Development Project (Figures 2 and 3). The third example was uncovered on Structure B16 by Arlen and Diane Chase of the University of Central Florida Caracol Project (Figure 4).

On the B5 masks, the headdress depicts the crenellated water lily pad strewn with a cross-hatched surface, and is tied across with a knotted water lily flower at either end. Fish are found nibbling on both blossoms. The face of the serpent has the long, down-turned beak found with both the Water Lily Serpent and the Principal Bird Deity. The ear flares also display profile faces of the Water Lily Serpent, along with the crenellated headdress. In the mouth of the central figure, where it lacks a lower jaw, is another depiction of this same being. A later construction buried these earlier masks without much damage except the very top edge of the headdress, making the B5 masks one of the best preserved Water Lily Serpent façades that has been uncovered to date. The construction phase that subsequently covered the Water Lily Serpent in the Terminal Classic was decorated with an image of Tlaloc, the Central Mexican rain god, executed in a different style.

The central serpent on the Structure B16 façade has two stalks of water lily flowers with fish extending above either ear flares (Figure 4). The serpent's beard shows water markings, and there is a water band that extends on either side of the serpent head, showing that the serpent is in a watery realm. These features lead us to identify the being as the Water Lily Serpent. The inscription below the serpent has been read to be referring to events that happened preceding and during the reign of K'ak' Ujol K'inich II (Ruler VI) (Martin and Grube 2000:103-4). The dates in the inscription span from A.D. 626 through 680. The last date noted appears to refer to the "star war" event inflicted by Naranjo.

It appears that the B5-sub and the B16-sub masks are contemporaneous. An earlier example of the Water Lily Serpent appears on Stela 5, a monument commissioned by Knot Ajaw (Ruler IV). The toponymic basal register portrays two flanking Water Lily Serpents emerging from the mouth and earspools of a central zoomorphic witz (see Beetz and Satterthwaite 1981:Figure 6). It is quite possible that the witz (or "mountain") refers to Caana, the principal structure at Caracol. As will be noted, a major spring underlies the Caana platform. At Caracol, the earliest portrayal of the Water Lily Serpent appears on the recently discovered, upper portion of Stela 20, dating to A.D. 400 (see Fields and Reents-Budet 2005:No. 97) (Figure 5). The zoomorphic tun sign is an excellent example of this deity, complete with a bound water lily pad headdress topped by the Oyster Shell Dragon.

Additional Examples in Monumental Architecture

Stucco façades depicting the Water Lily Serpent have been found at Late Classic Maya sites, including Dzibilchaltun and Ek Balam, both being in the Northern Lowlands of Yucatan. We suggest that, as in the case of the Caracol façades, these architectural manifestations of the Water Lily Serpent identify the structures as water temples. With regard to Caracol Structure B5, it is obvious that during the penultimate and terminal phases of architecture, both the Water Lily Serpent and Tlaloc masks are associated with water symbolism. They date to the Late Classic and Terminal Classic periods, respectively, indicating that at least for the Late Classic period, the structure functioned as a water-related temple. This is further supported by the discovery of large quantities of offerings at the base of the structure, even following the apparent abandonment of the site core

At Dzibilchaltun, Taube (Taube 1986:66-67; see also Robertson 1990) identified the stucco façade on the Temple of the Dolls (Structure 1-sub) as the Water Lily Serpent. No fish are present in this case, but the water lily tied around the head signifies its identity as the Water Lily Serpent. Even though they are in variable states of disrepair, all four sides and corners of the structure depicted the Water Lily Serpent, as can be identified by the knotted

water lily pad across the forehead of the deity. Moreover, a profile graffito image of the Water Lily Serpent was found in the interior floor of the structure (Taube 1986:67, see Andrews and Andrews 1980: Figure 110). Taube (1986:57) notes that this may be a diagram of the building itself. Along with the Water Lily Serpent heads, the temple cornice was ornamented with water bands containing the Oyster Shell Dragon, fish, and other aquatic elements.

A dedicatory cache was found at the southeast corner of the top terrace of Structure 1-sub below the plaster floor (Copo 1 phase: A.D. 600-750) (Andrews and Andrews 1980:97). This cache is significant because many of the artifacts reflect water symbolism, including shell mosaic inlay elements, stingray tails, and fish bone (Andrews and Andrews 1980:97). The function of this structure may be further examined by its relative location within the site. The Temple of the Dolls is located in the eastern terminus of Sacbe 1 which runs east-west from the center of the site, where the large Cenote Xlacah is located. This connection between Structure 1-sub and the central cenote is intriguing as Structure 1-sub represents standing water, or literally the Caribbean Sea to the east, and Cenote Xlacah is a cave feature that represents the underworld, where the sun sets in the west.

Another well-preserved example of the Water Lily Serpent depicted in monumental architecture occurs at Ek Balam. The stucco façade decorates the eastern, outer wall above the doorway of Room 42, also called the Temple of the Fish because of the presence of these creatures in the temple roof (Vargas De La Pena and Castillo Borgas 2001:415). The roof façade portrays the Water Lily Serpents wearing the crenellated water lily pad headdress bound by the stem with three flowers, one in the center of the brow and two at the sides. The three aforementioned fish are nibbling the flowers, a common trait of Classic period Water Lily Serpents. Although only three fish are shown, it is likely that a fourth is implied, suggestive of the four world directions. These fish may represent the four corners of the world as they surround the lily pad, the iconographic equivalent of the earth's surface. The water lily pad in the headdress is marked with circular water symbols, elements also found in the aforementioned stucco façades at Dzibilchaltun, along with three U-shaped elements, perhaps lily pads, at the top of the headdress. Mat symbols appear below and at the sides of the Water Lily Serpent head, possibly reiterating the connection between rulership and this deity.

Discussion

Structure B5 is located at the south side of the Group B plaza, and faces directly towards Caana, a massive pyramid supporting a triadic group. The prominent Water Lily Serpent masks on Structure B5 may refer to a natural spring underlying Caana, which stands across the plaza from the masks. Water was encountered not even a meter below the plaza surface at the frontal base of Caana, while in the center of the plaza, no water was found for hundreds of meters down (as the Tourism Development Project had dug a core in an attempt to locate water for the project camp). The presence of a spring may have played a decisive factor in the placement of Caana, the largest pyramidal structure at the site, because important buildings were commonly constructed over or in association with cave features including springs (e.g., Brady 1997). Caana is also built over modified bedrock or possibly cave formation tentatively identified as tufa, which is a type of travertine formed on the surface by calcitic deposits from a spring. Cut in antiquity so as to become integrated into the first terrace on the east side of the structure, this formation emits water after rains. Caana may therefore represent the construction of the pyramid over a watery cave feature (Ishihara 2003; Ishihara and Jack 2003), which fits the cosmological model of a witz ("hill/mountain") because caves were considered the insides of mountains, and pyramids were the architectural manifestation of natural mountains (Stuart 1997). In addition, the cave and spring, and by extension the Group B Plaza, may have signified the primordial sea with Caana as the sacred mountain-temple atop it.

It is highly significant that Altar 13, located on the frontal, north side of Structure B5 portrays the quatrefoil cave sign, with stones and probable water lily flowers portrayed in the four indent corners (see Beetz and Satterthwaite 1980:Figure 24). In the case of Structure B5, there is a small reservoir just southwest of the building. Altar 13 and the reservoir then

physically places water and cave symbolism adjacent to the very structure adorned with the Water Lily Serpent masks, along with the metaphorical sea in the Group B Plaza to the north. Structure B5 is literally surrounded by water and water imagery in the central core of Caracol.

Architectural sculptures such as the Water Lily Serpent masks formed part of what Epperson called the "aesthetic hegemony" in which the dominant ideology of the ruling peoples of Caracol was propagated. By "aesthetic hegemony" we mean that the façades visually and physically articulated the ruler's domination over the ever-important resource of water as part of "a generalized attempt to appropriate the historical aura and authority of [the supernatural], making specific relations of domination appear timeless and inevitable" (Epperson 1990:31). By mimicking the deities that first created the universe by means of constructing the main ceremonial plaza of the site in confirmation with Maya worldview, the architecture may be related to a public expression of the rulers' deified power to its own ruling people and other polities (e.g., Benson 1985:188; Brady and Ashmore 1999). Furthermore, ritual performances that were conducted in this theatrical stage would have been further charged with the sacrality of the primordial world (e.g., Schele and Mathews 1998:42).

Conclusions

In this paper, we have discussed the attributes and symbolic identity of the Water Lily Serpent. This being primarily represents standing water, but also relates to the earth, abundance, the underworld, and the primordial sea. The presence of this deity from the Late Preclassic to the Late Postclassic periods, a span of some 1500 years, demonstrates its importance for the ancient Maya. In addition, the occurrence of the Water Lily Serpent on monumental architecture indicates that this deity played an important ideological and political role among the Classic Maya. Finally, the identification of this deity with large and central structures within sites suggests the centrality of the concept of water in ancient Maya religious and political thought, particularly during the Late Classic period.

Water was not only an economic necessity but also carried religious importance to the ancient Maya. It is precisely because of these important associations that water, when considered within the larger socio-political framework of the ancient Maya states, becomes highly politicized and water management cannot be discussed without speaking of power relations in the society (e.g., Folan, et al. 1995; Ford 1991, 1996; Lucero 1999; Scarborough 1991, 1993; Scarborough and Gallopin 1991). The dry and rainy seasons in the Maya area augments the value of water as a critical resource. This scarcity of water leads to "political manipulation by a Maya elite to centralize and control power during the Classic period" (Scarborough 1998:136). Scarborough also argues that the ruling class "symbolically appropriated the everyday tasks of a sustaining population associated with water use by promoting water-related activities in high ritual performance" (Scarborough 1998:137). This is why the water lily was taken up by the political elites and appropriated into their iconographic vocabulary, in effect creating a close association between the water lily and rulership. Furthermore, rulers were often shown as the Water Lily Serpent deity, the god of standing water, because control over a precious resource meant power over the populace who relied on that resource.

The water temples honoring the Water Lily Serpent deity such as at Caracol were therefore constructed as a visual reminder of the ruler's power over water and as a physical place to celebrate this power through rituals carried out in the temple. This was one way in which elite rulers were able to maintain political power during the Classic period, particularly given the challenges of maintaining control over its large population, in the context of a dispersed settlement pattern and agricultural land use in the Maya Lowlands (Lucero 1999; Scarborough 1998).

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15 The Archaeology of Chechem Ha Cave, Belize: A Late Classic Hiatus in Usage

Holley Moyes

Cave studies have traditionally relied heavily on ethnographic or ethnohistoric analogy to understand the sacred context of Mesoamerican caves. What is little understood are the behavioral processes that produced the artifact assemblages in caves and the nature of the relationship between caves and their ancient users residing in surrounding surface sites. This study demonstrates that caves can provide information that is useful in broader research arenas. A Late Classic hiatus in cave use is described and correlated with regional sociopolitical stress. This correlation demonstrates that caves were not just venues for worshipping rain deities but were important political spaces that required protection from enemies.

Introduction

Beginning in the mid 1970's there has been a steadily increasing amount of research on Mesoamerican ritual in caves (Brady and Prufer 2005). Work in cave archaeology has traditionally relied heavily on ethnographic or ethnohistoric analogy to interpret the meaning of caves and their contents, but despite years of research little is known about the behavioral processes that produced the artifact assemblages in caves or about the nature of the relationship between caves and their ancient users residing in surrounding surface sites. To integrate cave archaeology into wider sociopolitical research arenas requires new methodological considerations that entail a shift in focus from the use of ethnographic analogy as the primary interpretive source to the artifact record itself. This paper demonstrates the utility of the approach at Chechem Ha Cave. The cave has been under investigation by the Western Belize Regional Cave Project (WBRCP) since 1998 under the direction of Dr. Jaime Awe. The overall project goals included the investigation of temporal depth and fluctuations in cave use-intensity in the region (Awe 1998:1). Research at Chechem Ha contributes by identifying fluctuations in cave use and articulating these findings with local and regional histories. Using a robust strategy of excavation and radiocarbon dating, this study identifies a period of hiatus in cave usage between A.D. 560 and A.D. 680 and examines the implications of this finding.

Setting

Chechem Ha Cave is an ancient Maya ceremonial site used from the Early Middle Preclassic (1100-700 B.C.) and possibly as early as 1300 B.C., to the Late Classic period (A.D. 600-900). The tunnel system in the cave is 198m in length and consists of over 300m of tunnels. For the purposes of this paper the cave has been divided into three parts, Tunnel 1, Tunnel 2, and Chamber 2. Chamber 2 is located in the center of the tunnel system, 134m from the cave entrance.

The cave is located in western Belize on the western bank of the Macal River near the Guatemalan border (Awe et al. 2005) (Figure 1). It is positioned at the edge of the Vaca Plateau approximately 26km north of Caracol and 25km southeast of Naranjo. The nearest surface sites are the middle-sized centers of Minanha to the south, Las Ruinas to the north, and Xunantunich to the far north. The Chan site, an agricultural community is located between Las Ruinas and Xunantunich

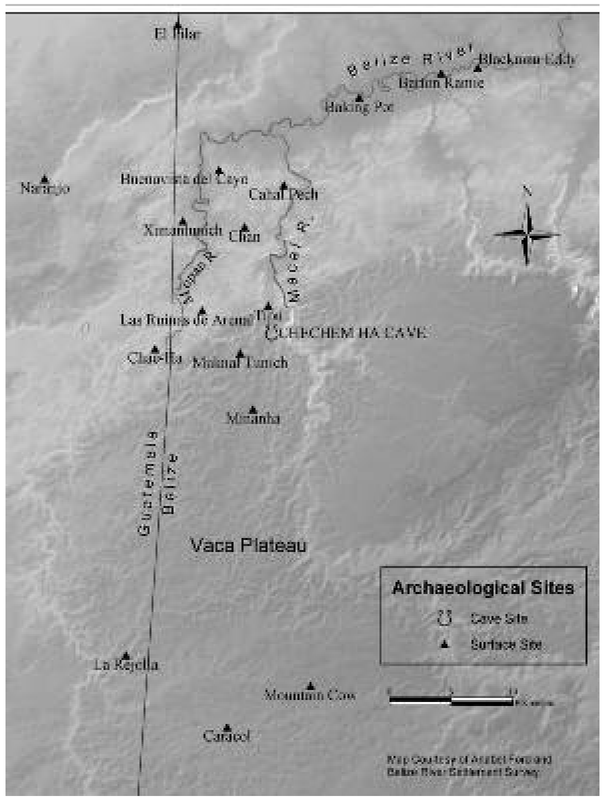

Figure 1. Digital elevation map (DEM) of western Belize showing location of Chechem Ha Cave and surrounding sites (Courtesy of Anabel Ford and the BRASS project).

Methods

In 1997 the WBRCP undertook an extensive mapping and survey program supervised by the author to record the cave's morphology, cultural features, and artifacts. The survey produced a detailed map of the tunnel system and an artifact catalogue. Extensive test excavations were conducted in 2001. Twenty-two small shovel test pits and six larger units were placed throughout the tunnel system (Moyes 2002).

Based on previous test results a broad horizontal excavation of Chamber 2, the area that demonstrated the heaviest utilization, was undertaken in 2003 to evaluate its usage over time. The excavation consisted of 18 natural or cultural layers excavated to bedrock (Moyes 2004). Charcoal collected from each of the layers as well as 24 samples from surface and subsurface deposits were dated at the University of Arizona Accelerator Mass Spectrometry (AMS) Laboratory. All samples were wood charcoal with the exception of two samples of corn. Dates were calibrated using Oxcal 3 and are reported at the 2 sigma probability.

There were 1901 ceramic sherds, whole, or partial vessels recorded in the cave that represented at least 566 different vessels. Of these 465 were typed for chronology (Jaime Awe 1999; James Aimers 2003; Joseph Ball 1999; Joseph Ball and Jennifer Taschek 2005, Ishihara 2000; Kay Sunahara 2001)[personal communications] using James Gifford's type-variety-mode system (Gifford 1976).

Settlement and Ceramic Chronology

When compared with data from surface surveys the ceramic analysis from Chechem Ha Cave demonstrated that cave ceramics provided a rough proxy for settlement in the local area. The histogram

in Figure 2 shows two data sets from local settlement surveys juxtaposed with the global set from Chechem Ha. The first set is compiled from Jennifer Ehret's preliminary survey of 242 mounds at Xunantunich (in Ashmore et al. 1994:283) and the second is from Cynthia Robin's survey of 100 mounds at the nearby Chan site (Robin et al. 2004:45).

Their data represent the percentage of mounds containing a particular ceramic complex. The data set from Chechem Ha is based on the percentage of the number of vessels representing each complex within the site. In the settlement survey data there is clearly a substantial occupation in the area during the Middle Preclassic period but few ceramics were found in the cave dating to this period. Both settlement and cave use drop off in the Late to Terminal Preclassic and all data sets show continual increases from the Early to the Late Classic Periods. There is a very small Postclassic occupation of areas around Xunantunich and within a single structure at the Chan site that does not show up in the cave data.

What is of interest here is that social disruptions occurring in short temporal frames are not apt to show up in these kinds of data. Although ceramic chronologies based on types are often used for dating there are inherent problems. First, some types may be prevalent throughout more than one time period (LeCount 2004) and second, chronologies are not fine grained enough to pick up small fluctuations in settlement. Data collected from caves that examine fluctuations in cave usage can aid in defining periods of hiatus and social disruption.

Excavations

Results of excavations conducted in the entrance area of the cave suggested that the entrance had been blocked off with small to medium-sized boulders at least three and possibly four times during the cave's history. Antonio Morales, the property owner, has reported that at the time of its discovery, limestone boulders blocked the entrance. Morales' account is credible because it is almost certain that the cave would have been heavily looted had the entrance been easy to find. Today, boulders surround either side of the outside entrance and are also located inside the entrance passage. Boulders were cleared from the center of the interior passage by the owners to create a stairway for tourists leading down into the cave's entrance chamber.

A 1.5m x 1m excavation unit, Unit 02-04, was placed in the center of the interior passageway at the base of the stairs. The matrix of the entire unit consisted of small to medium sized boulders and loose fill. The excavation revealed two use surfaces beneath layers of limestone boulders (Figure 3). The basal surface consisted of compacted clay and was AMS dated to the Middle Preclassic period (770-400 B.C.). Boulders and sediment covered the surface. A sherd dating to this period was horizontally embedded in the surface and a medium-sized boulder sat directly on top of the sherd. The charcoal sample was collected beneath the sherd. This suggested that the cave was in-filled some time after the Middle Preclassic period.

More boulders were noted below this surface but these were impossible to remove without expanding the unit and building supports to prevent the rock from collapsing. The presence of boulders beneath the early surface suggested an earlier infilling event as the above date was not the earliest date in the cave but was collected at the only possible entrance. This is a good indication that the excavation did not reach the base of

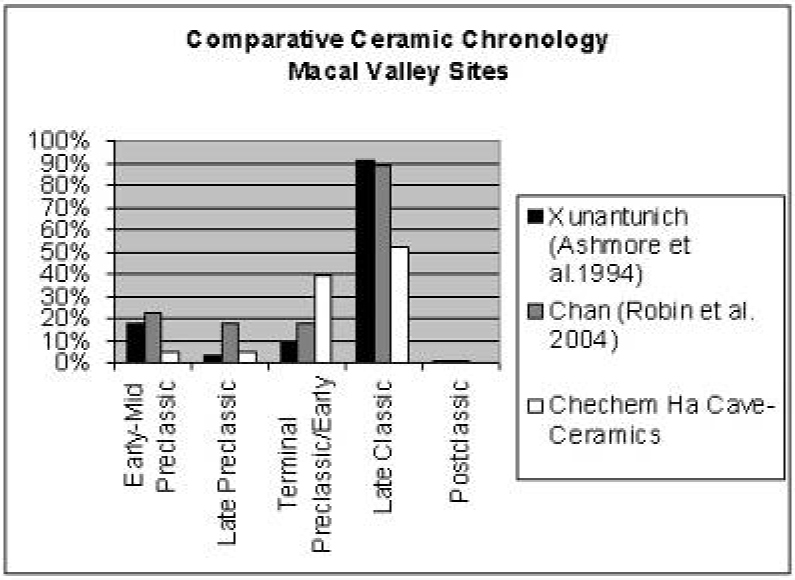

Figure 2. Graph of local settlement survey data sets from Xunantunich (Ashmore et al. 1994:283) and Chan (Robin et al. 2004:45) compared with Chechem Ha ceramic types

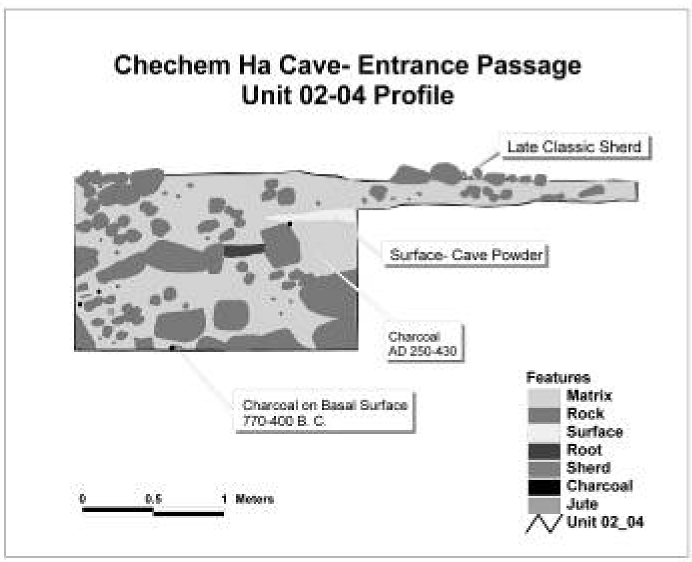

Figure 3. Profile of Unit 02-04 placed in jumbled boulders in entrance passage. Two use-surfaces were overlain by boulders.

the boulder jumble and that another surface lay beneath the rock.

The uppermost surface of the excavation consisted of compact blue-tinged clay with a crusty crystalline powder covering the top. This powder is most likely an autochthonous secondary mineral deposit referred to as "cave powder" (Hill and Forti 1997:87). These types of crusts are very fragile and any trampling immediately destroys them. The presence of the deposit suggests that the cave was unused for a period of time and eventually covered by sediment and rock. A piece of wood charcoal removed from below the compacted surface dated to the Early Classic Period (A.D. 250-430) and above the deposit Late Classic Spanish Lookout complex (A.D. 700-900) ceramics were scattered over the surface and between boulders. The

crust on the Early Classic floor suggests that the cave sat dormant for some time between A.D. 430 and the Late Classic period beginning about A.D. 700.

Rock overlying both of the excavated use- surfaces indicated that there were at least three and possibly four episodes of infilling in the entrance passage: one possibly prior to or during the Middle Preclassic, one after the Middle Preclassic, and another sometime after the Early Classic but before the end of the Late Classic. The final blockage of the entrance had to have occurred at the end of the Late Classic period as the latest radiocarbon date (A. D. 720-900) and presence of Late Classic ceramics suggests.

Regarding the broad horizontal excavation in Chamber 2, AMS dates revealed that the sediment of the modern use-surface dated to the Early Classic period. The lack of sedimentation in the area during the Late Classic period was odd as there were Late Classic sherds on the floor surface and on a small ledge above the chamber.

Radiocarbon Dating

The 37 calibrated AMS dates for the Maya levels of the cave are listed in Table 1. The general areas from which dates were collected are indicated as Tunnel 1, Tunnel 2, Crawl 3, and the Chamber 2 excavations. The dates are listed in chronological order. Note that there is a gap in the dates from A.D. 560-680. There are no overlapping dates in any cave area and almost no ceramics that date to this time period, suggesting that there was a hiatus in cave use.

Excavations in the entrance passage revealed an Early Classic use floor with boulders and sediment covering the top indicating that the cave entrance was blocked sometime after A.D. 430. Recall that a fragile crust or cave powder formed on the top of the use-surface and its presence precluded trampling of the crust. At some point it was protected by being covered over with sediment and rock, possibly as the cave was being unblocked prior to its Late Classic usage. Blocking of the entrance during the early part of the Late Classic period would explain why there was so little sedimentation in Chamber 2 following the Early Classic. Not only would the lack of human usage reduce sedimentation, but by blocking the entrance, the cave would also be inaccessible to bats, further eliminating sedimentation.

Explaining the Hiatus

Too often caves are thought of as remote venues whose sole purpose is devoted to the propitiation of rain deities. The sites are treated as un-integrated entities and it is easy to forget that cave ritual was a vital part of the ancient Maya community that may be expected to reflect the concerns and fortunes of the ancient users. There are no single blanketing explanations for disruptions in cave use just as there are no single explanations for socio/cultural ills. However, some factors must contribute highly to disruptions in community life and therefore disruptions in ritual practices. Disruptions on local community or regional scales will likely correlate with sociopolitical problems or environmental stress.

The Late Classic hiatus at Chechem Ha (A.D. 560-680) is not an isolated occurrence but in fact overlaps the Classic Hiatus Phenomenon (A.D. 534-593) identified and described by Gordon Willey (1987:72-73). Willey considers the hiatus to be a phenomenon of the southern lowlands during which there is a marked drop-off in stela carving and dedication for approximately 60 years dividing the Early and Late Classic periods. The hiatus is not indicated in the northern Maya areas or at

Palenque and some northern sites fluoresce at this time. Although Willey offers no explanation for the occurrence, Richardson Gill (2000:318) struggles to argue that the hiatus is caused by aberrations in the world climate around A.D. 536. Gill mentions that Curtis et al. (1996) record a drought at Punta Laguna in Quintana Roo. The problem is that the northern areas were not the ones affected by the phenomenon, which weakens his argument.

If the hiatus was in fact a result of climatic manifestations, we would expect aberrations in the local climate record. James Webster (2000) conducted a paleoclimate study using a speleothem from the Vaca Plateau in western Belize, which provides an excellent local paleoclimate proxy. Webster evaluated the thickness and frequency of bands, their color, luminescence, and isotopic ratios ($\delta^{18}O$). Although the rings were dated using radiocarbon methods, the speleothem was of a known age so that old carbon could be factored as a variable in the calibration using a standard calculation. Webster's climate record illustrates that moisture was within an average range during the entire hiatus (Figure 4). The hiatus followed one of the wettest episodes in Classic Maya history for the local area therefore there was no preceding drought. It is clear that something else was occurring in the area at this time.

Although there is little epigraphy in the Belize Valley, numerous texts are available for the closest large sites, Caracol and Naranjo. Table 2 is an abbreviated compilation of deciphered texts spanning the Hiatus 3 time period. The table was assembled from the Notebook for the 28th Hieroglyphic Forum at the University of Texas at Austin. War events, skirmishes, births, and accessions are included in the table. The dates that include Hiatus 3 are highlighted in gray.

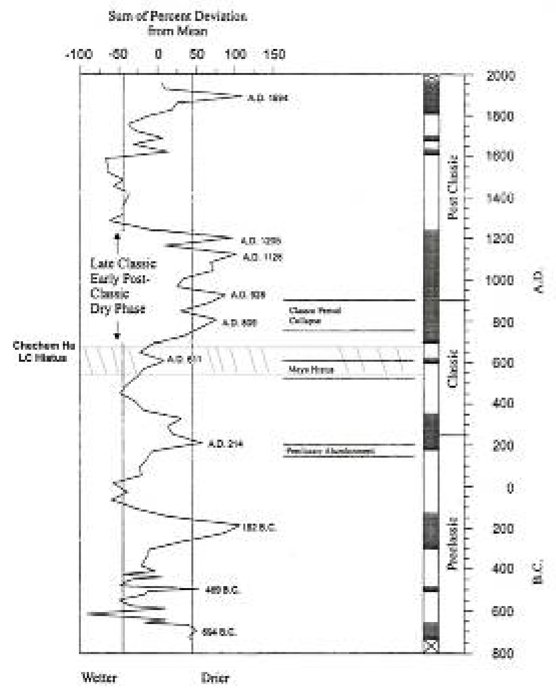

Figure 4. Reconstruction of moisture conditions for the Vaca Plateau for the past 2,700 years. The bar chart indicates drier conditions in black. Diagonal lines illustrate the hiatus in cave usage at Chechem Ha. Note the overlap with the Maya Hiatus. (after James Webster 2000:197, fig.8.2)

During the hiatus there are wars between Tikal, Naranjo, and Caracol. Tikal is defeated by Caracol by A.D. 562, the beginning of the Chechem Ha hiatus. Following Tikal's defeat there is a war between Caracol and Naranjo that lasts until A.D. 680 when Caracol goes into a hiatus lasting until A.D. 700. Naranjo continues its domination until the Late Classic period and is mentioned on texts from Xunantunich in the early 9th century. The cave is blocked off (A.D. 560-680) during the same time period that conflicts arise between Caracol and Naranjo (A.D. 596-680). It is unlikely that this is a coincidence. Recall that Chechem Ha is located halfway between the two sites and could easily be pillaged by either side.

AZ Lab #	Period	Area	Radiocarbon	Calibrated Date
			Age	2 Sigma
AA57293	LC	T1	1187±33	AD 720-900
AA57288	LC	T1	1210±31	AD 690-900
AA59754	LC	T1	1224±38	AD 680-900
AA59753	LC	T1	1239±36	AD 680-890
AA57291	LC	T1	1244±31	AD 680-890
AA57271	EC	Ch2_excL2	1587±34	AD 400-560
AA57290	EC	T1	1605±32	AD 390-540
AA57310	EC	T1	1607±32	AD 380-540
AA57307	EC	T1	1638±42	AD 260-540
Beta	EC	Ch2_excL1	1660±40	AD 250-540
AA57301	EC	T1	1685±32	AD 250-430
AA59755	EC	T1	1696±36	AD 250-430
AA57272	EC	Ch2_excL3	1673±34	AD 250-440
AA57273	EC	Ch2_excL4	1668±34	AD 250-440
AA57274	EC	Ch2_excL5	1685±39	AD 240-440
AA57289	EC	T1	1714±33	AD 240-420
AA57299	EC	T1	1716±36	AD 240-410
AA57275	EC	Ch2_excL6	1744±40	AD 130-420
AA57311	LPC	T1	1944±71	120 BC-AD 250
AA57291	LPC	T2	2096±33	200 BC- AD 0
AA57276	LPC	Ch2_excL7	2120±34	350-40 BC
AA57306	LPC	T1	2156±34	360-60 BC
AA57308	LPC	T2	2130±34	360-40 BC
AA57312	LPC	T2	2135±32	360-50 BC
AA57309	LPC	T1	2275±34	400-200 BC
AA57313	LPC	T1	2295±34	410-200 BC
AA57314	LPC	T1	2309±37	410-200 BC
AA57298	MPC	T1	2339±42	800-200 BC
AA57302	MPC	T1	2432±33	600-400 BC
AA57300	MPC	T1	2465±33	770-400 BC
AA57296	MPC	T2	2517±37	800-510 BC
AA57278	EPC	Ch2_excL9	2755±35	1000-820 BC
AA57279	EPC	Ch2_excL10	2760±34	1000-820 BC
Beta170518	EPC	Ch2_excL12	2780±40	1010-820 BC
AA57277	EPC	Ch2_excL8	2826±34	1130-890 BC
AA57280	EPC	Ch2_excL11	2865±33	1190-920 BC
AA57282	EPC	Ch2_excL13	2847±34	1320-910 BC
AA57281	EPC	Ch2_excL12	2931±62	1320-930 BC
LC=Late Classic	EC=Early Classic	LPC=Late Preclassic	MPC=Middle Preclassic	EMPC=Early Middle Preclassic

Table 1. AMS dates for the Maya Levels of Chechem Ha Cave. Late Classic gap in cave use highlighted

AD 514	Caracol	Stela 13	accession of king Yajaw Te K'inich I
AD 531	Caracol	Stela 15	accession of king K'an I, also-axe event against Caracol-mentions Tikal and Calakmul
AD 546	Naranjo	Stela 25	accession of Aj Wosal-supervised by ruler of "snake" kingdom (Calakmul?)
AD 556	Caracol	Altar 21	Tikal inflicts axe event on Caracol
AD 562	Caracol	Altar 21	Starwar defeat of Tikal by Caracol?probably Calakmul?
AD 562-692	Tikal		Tikal Hiatus
AD 596	Naranjo	Altar 1	War event with Caracol
AD 599	Caracol	Stelae 5,6	New boy king
AD 619	Caracol	Stela 3	Calakmul mentioned
AD 621	Caracol	Stela 22	Calakmul mentioned
AD 622	Caracol	Stela 3	Present of deity figure? From Calakmul King
AD 626-680	Naranjo		Naranjo Hiatus
AD 627	Caracol	Stela 3	Calakmul attacks Naranjo
AD 631	Naranjo	HS1, StepVI	Calakmul conquers Naranjo in star war
AD ?	Caracol	Stela 3	Calakmul conquers Naranjo in star war
AD 680	Caracol	B16 Stucco	Starwar defeat Caracol by Naranjo
AD 680-798	Caracol		Caracol Hiatus-only Stela 21 erected around 700
AD 682	Naranjo	Stelae3,18,24,29	Arrival Lady Six Sky of Dos Pilas-links to
			Calakmul-daughter of warrior king
AD 692	Naj Tunich		mention of Caracol king
AD 693	Naranjo	Stela 22	Burning of B'ital-unknown site between
			Naranjo and Caracol
AD693-698	Naranjo	Stela 22, 29	Skirmishes

Table 2. Selected events in the eastern Maya lowlands recorded in epigraphic texts from A.D. 514-700. Time spanning Hiatus 3 at Chechem Ha highlighted in table.

In a recent publication Brady and Colas (2005) demonstrate from epigraphic evidence that caves can be places for aggression in war events. Three seventh century panels that were looted and thought to have come from the Piedras Negras region, record the story of the ruler Nikte Mo' who scatters fire into the cave of ruler K'ab Chante. Following this event Nikte Mo' is beheaded and the authors interpret the fire scattering event as act of war.

Although we do not know exactly where Maya wars were fought it makes sense that soldiers moving between the sites may have frequented rural areas between the two creating a war zone. Because the cave was re-opened after the fall of Caracol, this suggests that the users of Chechem Ha may have been allied with Naranjo and that the cave was blocked as a defensive maneuver.

Conclusion

Although methods that relied heavily on ethnographic analogy have been vitally important in understanding the sacred meaning of the cave context, it is the archaeological record that offers information on how caves were used by the ancient Maya. These data can be useful in broader archaeological contexts. By shifting the focus of cave study to a behavioral approach it becomes clear that caves were not regarded exclusively as ritual spaces but as political spaces as well. Correlating periods of usage and abandonment with events occurring in the local and regional areas

sheds light on the nature of cave use and demonstrates the importance of the cave to the local community. These sites were not just venues for worshipping rain deities but were important political spaces that required protection from enemies. These data help to integrate ritual cave use with local and regional sociopolitical events and with them in hand it is possible to better understand ritual practice within the social and natural environmental contexts.

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16 THE ORIGINS AND PLACEMENT OF THE BALLCOURT AT YALBAC

Joanne P. Baron

Recent excavations of the ballcourt at Yalbac have demonstrated its Late Preclassic origin and explored its relationship to an adjoining pyramidal structure.. The ballcourt's early construction, termination, and Late Classic revival are indicative of Yalbac's interaction with other polities. In its Late Classic phase, the ballcourt obstructed this structure's axial stairway and access to the plaza below. It is hypothesized that the use of this arrangement was due to the ritual significance of the ballcourt's location. These data, obtained from the 2004 and 2005 excavation seasons of the Valley of Peace Archaeology project, are presented here.

Introduction

The rubber ballgame tradition is widespread in Mesoamerica. There are over 1,500 known ballcourts, located in Central America, the American Southwest and the Caribbean Islands. The ballgame was played from the Middle Preclassic period (1000-400 B.C.) (Agrinier 1991) through to present day (Leyenaar 2001). While much about this game remains unknown, its prevalence alone indicates its paramount importance in Mesoamerican society. Nearly every Maya center contains a ballcourt. Indeed, there are over 50 identified ballcourts in Belize alone. Ballcourts, while often small, can provide insights into the development of polities and regions. The construction history of the Yalbac ballcourt, which is similar to other ballcourts in Belize, and its location, which was maintained throughout the site's history, though it subsequently blocked the axial stairway of a large pyramidal structure, demonstrate the ballcourt's political and ceremonial nature.

The Ballcourt's Significance

The ballcourt of an ancient Maya center was an area of both religious and political significance. In scholarly literature concerning the Maya ballcourt, the story of the Hero Twins is the most often cited mythological reference to the ballgame. Our understanding of their story comes from the Popol Vuh, the Quiché creation story recorded in colonial times. In this myth, the Maize God, his brother, and his Hero Twin sons have a series of adventurous encounters with the lords of the underworld involving several ball games. While the Popol Vuh is only one version of a basic traditional origin mythology, scenes from the story of the Hero Twins are represented in Classic Maya iconography, indicating that they are part of the same enduring tradition. For instance, ballcourt markers at the sites of Copán and La Esperanza show their kings acting out ballgames described in the Popol Vuh and impersonating gods from the story (Tokovinine 2001). In addition to these gods, several others, unrelated to the Hero Twin story are impersonated in ballcourt scenes (Tokovinine 2001). This plethora of religious associations with the ballgame indicates that the ballcourt was ritually and religiously significant.

In addition to their religious function, ballcourts and associated ballgame events served a political purpose as well. Although not every Maya center contained a ballcourt, especially during the Late Preclassic and Early Classic periods, many centers contained multiple ballcourts. Therefore, scholars have often hypothesized that the presence or absence of a ballcourt

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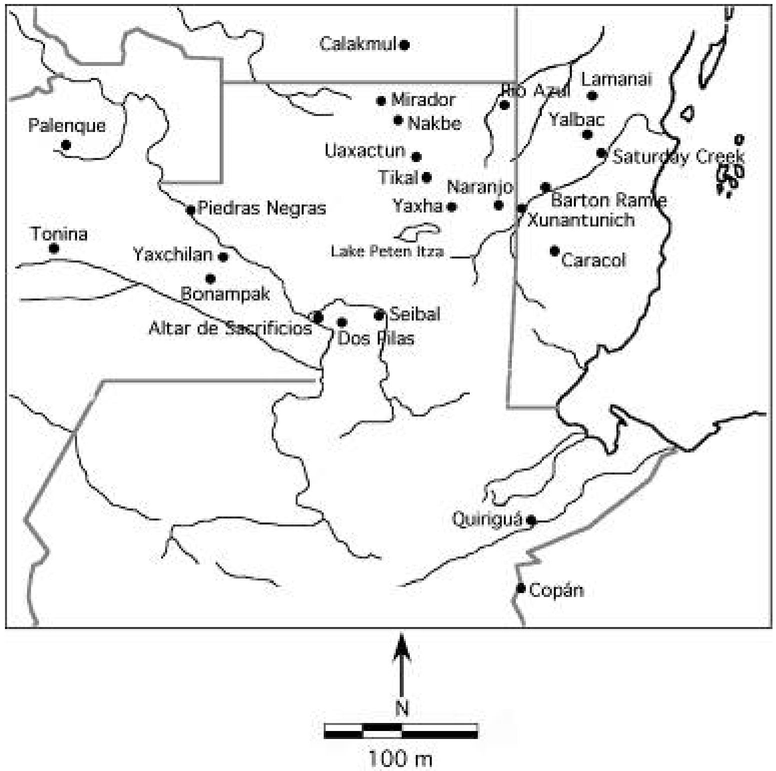

Figure 1. Map of the Maya Area showing Yalbac. (Courtesy of VOPA.)

corresponds to the political power held by a particular center (e.g.van Tuerenhout 1991; Healy 1992; Lohse et al. 2004). The presence of a ballcourt at a site demonstrates the ability of the rulers of that polity to sponsor public spectacles and feasts for locals or visitors, thus enhancing their prestige among elites and authority over subjects.

Images on ceramics and carved monuments show that ballgame events were scenes of richly costumed lords, and bountiful feasts (Zender 2001). Archaeological evidence for feasting events has been found at ballcourts throughout the Maya area in the form of serving vessels, grinding tools, obsidian blades, and animal bones (Fox 1996). Evidence indicates that the sponsoring of ritual ballgame events was used by elites during the Classic period for political integration and competition. As John Fox puts it,

> *'ballcourts may be viewed as public arenas in which power relations were negotiated, reproduced, and occasionally transformed through rituals in which the layered symbols of ballgames and feasts were alternately evoked [Fox 1996: 493].'*

A ballcourt, then, served as more than a symbolic location. It indicated a ruler's ability to engage in inter-site competition, as well as his ability to sponsor expensive events for the local populace and visiting lords.

Ballcourts of Belize

Archaeologists have recorded and excavated numerous ballcourts throughout Belize. While most of these ballcourts date to the Late Classic period (A.D. 600-800), there are several that date to the Late Preclassic period (400 B.C.-A.D. 250) as well. Ballcourts in the Belize River Valley and Three Rivers Region, those two areas

closest to Yalbac, demonstrate similar patterns of construction history.

Preclassic ballcourts in the Belize River Valley include those at Actuncan (McGovern 1993), Buenavista (Ball and Taschek 2001), El Pilar (Ferguson 1999), Pacbitun (Healy 1992), and Saturday Creek (Jeakle 2002). Of these ballcourts, only those of Buenavista and Pacbitun were maintained during the Early Classic period (A.D. 250-600). Even so, this maintenance amounted to a mere series of replasterings rather than major architectural changes or new phases (Ball and Taschek 2001 and Healy et al. 2004). The other aforementioned ballcourts in the Belize Valley lacked construction activity during the Early Classic period. El Pilar’s northern ballcourt did not see reconstruction after the Late Preclassic period (Ferguson 1999), and those at Actuncan and Saturday Creek had no construction episodes for the duration of the Early Classic, only to become once again the focus of building activity during the Late Classic (McGovern 1993; Healy 1992; Jeakle 2002).

The only ballcourt in the Belize Valley to witness construction in the Early Classic was located at Las Ruinas de Arenal (Ferguson 1999). In the Late Classic, however, several new ballcourts were constructed in the Belize River Valley, most of them at sites that had not previously had a ballcourt. It seems, therefore, that while building activity was relatively common during the Preclassic period, ballcourt construction declined in the Early Classic only to regain popularity in the Late Classic.

This phenomenon also occurred in the Three Rivers Region of Northwestern Belize, where several ballcourts have been dated to the Late Classic period. While no Preclassic ballcourts have yet been identified in this region, there are only two known Early Classic ballcourts: those at Blue Creek (Guderjan 2004) and Ixno’ha (Lohse et al. 2004). A comparatively larger number of ballcourts were built during the Late Classic period: those at Gran Cacao, Ma’ax Na (Lohse et al. 2004), Chan Chich (Houk 1997), Punta de Cacao (Robichaux et al. 2001), San Jose (Thompson 1939) and two each at Dos Hombres (McDougal 1997; Houk 1996) and La Milpa (Schultz et al. 1994). Therefore, the Three Rivers Region shows a similar pattern to the Belize River Valley to the south. While lacking Preclassic ballcourts, this region shows a marked increase in ballcourt construction during the Late Classic period as compared to the paucity in the Early Classic.

There are several possible explanations for this phenomenon. Perhaps the act of ball playing lost popularity or changed dramatically during this time. Taladoire (2001), citing a pan-Mesoamerican drop-off in Early Classic ballcourt construction, hypothesizes that the city of Teotihuacán in Central Mexico, whose influence reached the Maya area, might have had an impact on ballgame practices during this time. Teotihuacán lacks a ballcourt, suggesting that a different form of the game, one that did not require a ballcourt, was played at Teotihuacán and in the areas under its influence.

There are other possible explanations as well. As discussed, the ballgame played among the Maya, was an opportunity to show off wealth and power, but required great expenditures on the part of rulers or elites. A decline in the ability to sponsor these types of events for economic or political reasons may have manifested itself in a lack of renovation or rebuilding at the local ballcourt. Alternatively, the location of ceremonial functions may have moved from the ballcourts to other site areas. Such changes do not suggest that ballcourts necessarily fell out of use completely, but that they served a less important function,

and suffered a decline in use reflected by a decrease in construction activity.

Finally, it is possible that the apparent Early Classic decline in ballcourt construction is simply an artifact of the ceramic chronology used to date the structures. It has been argued that Early Classic ceramic assemblages contain what had previously been recognized as Preclassic pottery types. This might lead an Early Classic assemblage to be mis-identified as Preclassic. Therefore, "our current typological scheme artificially inflates the number of Late Formative sites and falsely exaggerates the decline in Early Classic sites (LeCount 2004: 28)." This is a rather disturbing conclusion, which has implications beyond the question of ballcourt construction.

The Yalbac Ballcourt

The Yalbac site core is located near Yalbac Creek at the very southern edge of the Orange Walk district (Figure 1). The Yalbac hills form a steep, east-west ridge just four kilometers to the north. These hills form a natural barrier between the Belize River and its tributaries to the south and the Three Rivers region to the north. Excavations at Yalbac have yielded ceramics dating from ca. 300 B.C. through A.D. 900, or Late Preclassic through Terminal Classic periods (Conlon and Ehret 2002). The site core contains three main plazas, an acropolis over 20 m in height; several range structures and six pyramidal structures ranging from 8 to 16 m in height. Attached to the front of the largest of these is Yalbac's only known ballcourt (Graebner 2002a, 2002b) (Figure 2).

The Valley of Peace Archaeology (VOPA) project has worked at Yalbac since 2001 collecting chronological and architectural information from excavation as well as from the many looters' trenches at the site (Lucero 2002, 2003, 2004b, 2005). However, little is known about the nature of Yalbac's relationship with other centers in Belize, and the work that has taken place at the nearby sites of San Jose and Mun Diego has not been extensive (see Thompson 1939). Other large sites also exist in the area that have not been excavated, and to our knowledge, have not been mapped.

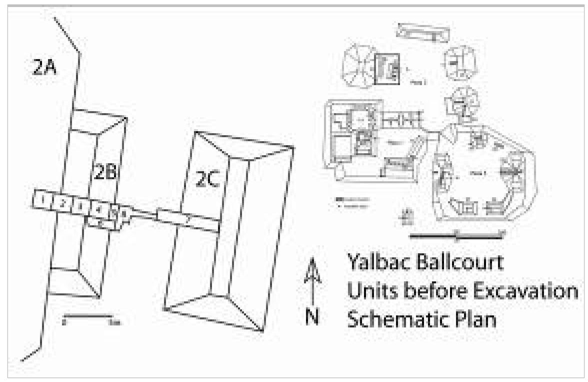

Figure 2. Map of the Yalbac site core and 2005 trenches (Courtesy of VOPA)

Prior Excavations 2002 - 2003.

The ballcourt at Yalbac is located in Plaza 2 and is comprised of Structures 2B and 2C. Structure 2B is attached to the front of Structure 2A, one of the largest constructions at the site. Excavations at the Yalbac ballcourt took place over several years. Weather conditions during the 2002 and 2003 seasons delayed the completion of excavation in the ballcourt alley until 2004 (Baron 2005). In 2003 a 3-x-1-m trench was placed in the ballcourt alley perpendicular to Structures 2B and 2C, which are oriented 17° east of north. The purpose of this excavation was to locate the alley floor and, it was hoped, a ballcourt marker. For this reason the trench was placed in the center of the alley, perpendicular to Structures 2B and 2C. Excavations revealed collapse debris as well as a series of tightly spaced plaster floors, possibly compensating for poor construction or lack of ballast (Lucero 2004a). The ceramics yielded by these strata indicated that the most recent floors

from the ballcourt alley date to the Late Classic period (A.D. 600 or later). Before rains became too heavy to continue working in 2003, excavators came upon a layer of heavy burning. Partially removing this stratum, they also uncovered another plaster floor, but were forced to cover it and stop the season's excavations.

2004 Excavations

The 2004 season saw the completion of excavation in the ballcourt alley (Baron 2005). Exposure of the burned stratum indicated a substantial burning event, which was dated by associated ceramics to ca. 250 B.C. to A.D. 250 (Late Preclassic). It is hypothesized that the burning event corresponded to the ritual termination of the ballcourt. Beneath the burned layer was the plaster floor that had been exposed during the previous season, also dating to the Late Preclassic period. Finally, below this floor and an intermediate layer of clay fill, a final plaster floor was uncovered. This floor was continuously plastered with the western edge of a low bench of the ballcourt's first construction phase, exposed at the very eastern end of the trench (Figure 3). While no ceramics were found in the masonry fill of this bench, those from the clay fill between the flooring episodes dated from ca. 300-100 B.C. in the Late Preclassic period. Not far below this floor was light-colored sterile soil (Baron 2005).

In summary, the ballcourt alley contained three major episodes of plaster floor construction (Figure 4 and 5). Two of these were built between 300 and 100 B.C. during the Late Preclassic period, and were followed by a major burning episode dating to 250 B.C.-A.D. 250, also in the Late Preclassic. Finally, between A.D. 600 and 700, in the Late Classic period, a series of floors was constructed. These include the floors uncovered in 2003, as well as another exposed in 2005, which had not been recognized in original excavations (see 2005 excavations below). Due to the heavy burning found on top of these earlier floors, it is likely that the ballcourt was terminated during the Late Preclassic period and was not used again until the Late Classic, at which point it was rebuilt.

This construction sequence in the ballcourt alley at Yalbac is most similar to that of the nearby Saturday Creek ballcourt, at which two Late Preclassic flooring episodes were found, covered in Late Preclassic fill. This fill contained burned materials limited to the center of the ballcourt alley. Two more flooring episodes were later added to the ballcourt alley, both during the Late Classic period (Jeakle 2002; Jeakle et al. 2002).

Figure 3. Preclassic ballcourt bench

2005 Excavations

During the 2005 season, work at Yalbac's ballcourt focused on its final construction phase and its relationship to Structure 2A, which the ballcourt abuts. Structure 2A is the largest pyramidal construction at the site and the only one that has not suffered looting. However, we lack chronological information about it. The position of the ballcourt in relation to 2A is unusual. While ballcourts at many Maya sites are located behind temples or within major plazas, Yalbac's ballcourt is attached to the front of 2A. This configuration would

have blocked the frontal stairway and obstructed the structure from the plaza.

Excavations in 2005 were designed to expose the terminal architecture of ballcourt structures 2B and 2C. This was accomplished with a series of axial trenches across the structures and through the center of the alley (figure 2). The greatest effort was focused on a 2-x-9-m trench running from the estimated area of juncture between Structures 2A and 2B to the estimated eastern edge of Structure 2B. This trench was divided into four 2-x-2-m and one 1-x-2-m units, numbered 1-5. This placement overlapped with the original trench from the 2002 season. To the south of this trench was placed another, unit 6, measuring 3-x-1 m, to expose more of the sloping playing wall. This trench was confined to the eastward, bottom portion of 2B and did not continue above the sloping surface. A 1-x-6.5-m trench (unit 7) was opened in Structure 2C to fully establish the parallel, mirror-image nature of the structures and support the final conclusion that these structures represent a ballcourt. Finally, for clarification of the base of each structure, units 7 and 5 were connected with on final unit, (number 8) which was an eastward extension of units 5 and 6, and a narrow (.5 m wide) trench along the alley floor.

There were two questions to address in the 2005 season. The first was the nature of the ballcourt's terminal phase construction. To this end, excavation was designed to simply expose the architecture of 2B and 2C. However, the excavators of the ballcourt trench in 2002 had accidentally mistaken architectural layers for collapse and removed them. The area of this removal corresponded to the center of our units 4, 5 and 8. The internal layers of 2B were therefore also included in analysis. The original trench, however, was only 1 m wide, and intact strata were left on either side. The end result was an exposed profile of the fill behind the sloping playing wall and the foundation underneath it (Figure 6). Based upon the 2002 excavations and the trenches on Structure 2B, conclusions could be drawn about the construction of the ballcourt's terminal phase.

Excavation revealed a line of small boulders on top of the plastered playing alley, which formed a low step only about 20 cm tall. Most of these stones were no longer present in unit 8, possibly having been removed in 2002. Above these stones was a layer of cobbles set in mortar about 20 or 30 cm thick. This stratum was best exposed on a narrow line between units 5 and 6, since elsewhere it was covered in cobble facing stones or collapse. Above the layer of cobbles was a layer of large, flat boulders set in mortar. The eastern edge of these flat stones was set back from the first line of small boulders by 20-30 cm to account for the sloping of the playing wall. These three layers apparently made up the foundation of Structure 2B and may have continued westward all the way under the structure.

Above the flat stones set in mortar was a dry fill of stones of all sizes, from large boulders to small pebbles. It was this fill that was removed in 2002 in the center of the trench. The fill was piled to form the sloping wall of the playing alley, which was then covered with a layer of facing stones, continuing all the way down to the level of the first foundation layer, the line of small boulders. The resulting slope rose above the alley at an angle of about 30º and ended about 2 m above and 3 m west of the edge of the alley. West of this sloping wall was a platform, about 60 cm wide, composed of more large, flat boulders set in plaster. This platform was placed on top of the dry fill exposed in unit 4. Above the narrow platform rose a nearly vertical wall face, about 1.5 m high. This formed a retaining wall for the rest of Structure 2B behind it,

Figure 4. North wall of the 2004 ballcourt alley trench

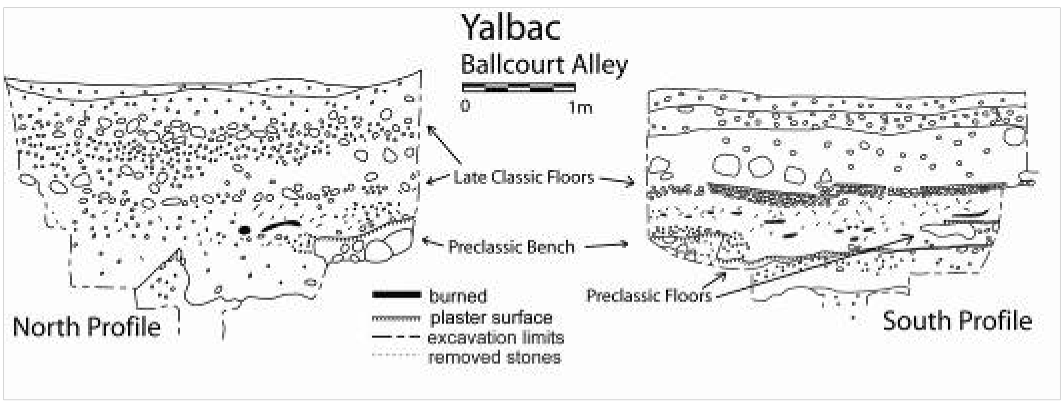

Figure 5. North and south profiles of 2004 ballcourt alley trench

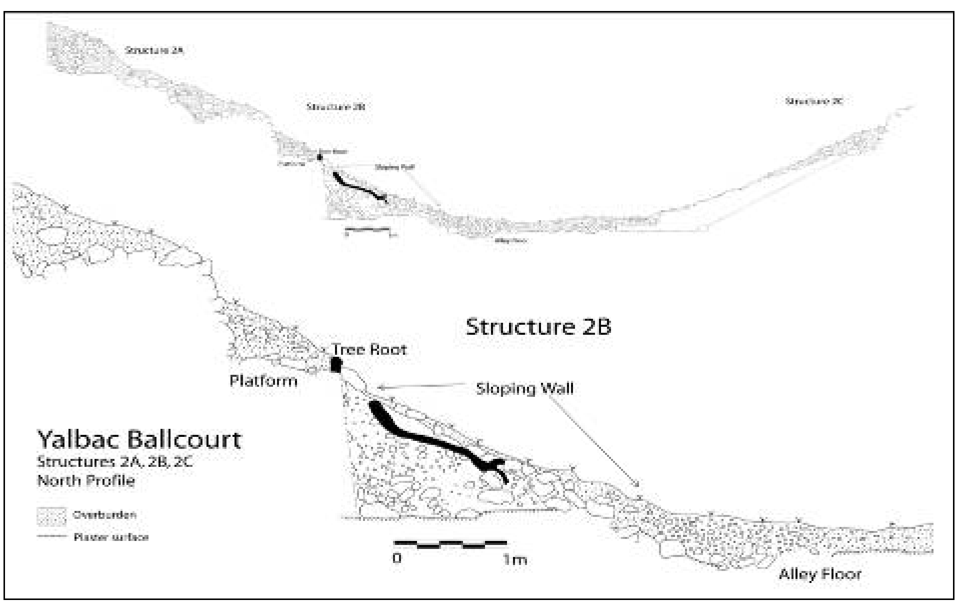

Figure 6. Profile of Structures 2A, 2B, and 2C

which, was topped with an eroded platform. This platform continued westward to the juncture with Structure 2A.

Our attempt to expose the architecture of Structure 2C was less successful. The 1.5-m vertical wall that topped the playing walls was fully exposed, along with the narrow platform at its base. The existence of these two features at the correct height satisfactorily demonstrated that the structures do represent a ballcourt. However, exposure of the sloping wall of 2B was not enough and it became clear at the end of the season that while not all of the collapse on Structure 2C had been removed, there was insufficient time to remove it. Therefore the sloping playing wall of 2C is reconstructed by analogy to the much more fully excavated 2B. Between the two structures was exposed the much eroded plaster floor of the final playing alley. While this floor was not reported in 2002 when the original trench was excavated, its cobble ballast can be seen in the north profile of the ballcourt alley unit completed in 2004 (Figure 5).

All of the features just discussed yielded Late Classic (A.D. 600-800) ceramics. While it was originally surmised that the foundation layers of 2B might have been built during an earlier phase of construction, the ceramics recovered showed that this was not the case. Therefore the entirety of the architecture exposed in 2005 represents the terminal construction of the ballcourt, and the architecture of its Late Preclassic predecessor still lies buried underneath or was demolished during the Late Preclassic termination.

The second area of inquiry during the 2005 field season was the relationship between Structures 2A and 2B. Finding the location of their abutment proved laborious and time consuming, as many large boulders that had fallen from 2A had to be removed. However, the juncture of the two structures was finally located in unit 2. West of the vertical retaining wall discussed above, Structure 2B was topped by an eroded platform 1.5 m wide. At this point the platform abutted with steep sloping architecture consisting of large boulders piled on top of one another and set in mortar. This sloped wall face was about 1.2 m high, above which was another terrace, this one several meters wide and continuing into the west wall of unit 1.

A close examination of the point of juncture between the two structures did not reveal a clear superposition of one above the other (Figure 7). In fact, the terminal construction of the two structures appeared to have been built in a single phase. Ceramic analysis corroborated this conclusion. Sherds from both structures were Late Classic in date. It is clear, therefore, that whatever the chronology of the architecture buried under Structures 2A and 2B, their terminal phases were coeval and therefore the structures were undoubtedly in use at the same time during the Late Classic period.

Analysis

While the Yalbac ballcourt exhibits a unique relationship to the abutting structure 2A, other characteristics such as its chronological history and form are typical of ballcourts in Belize. Examining regional trends in ballcourt chronologies allows us to place the Yalbac ballcourt in its proper perspective. The two regions immediately to the north and south of Yalbac display a relative paucity of Early Classic ballcourt construction as compared to that of the Late Classic period. Additionally, several ballcourts in the Belize River Valley, like Yalbac, have construction phases dating to the Late Preclassic period. Most of these ballcourts, however, reflecting the regional trend, were left unmodified during Early

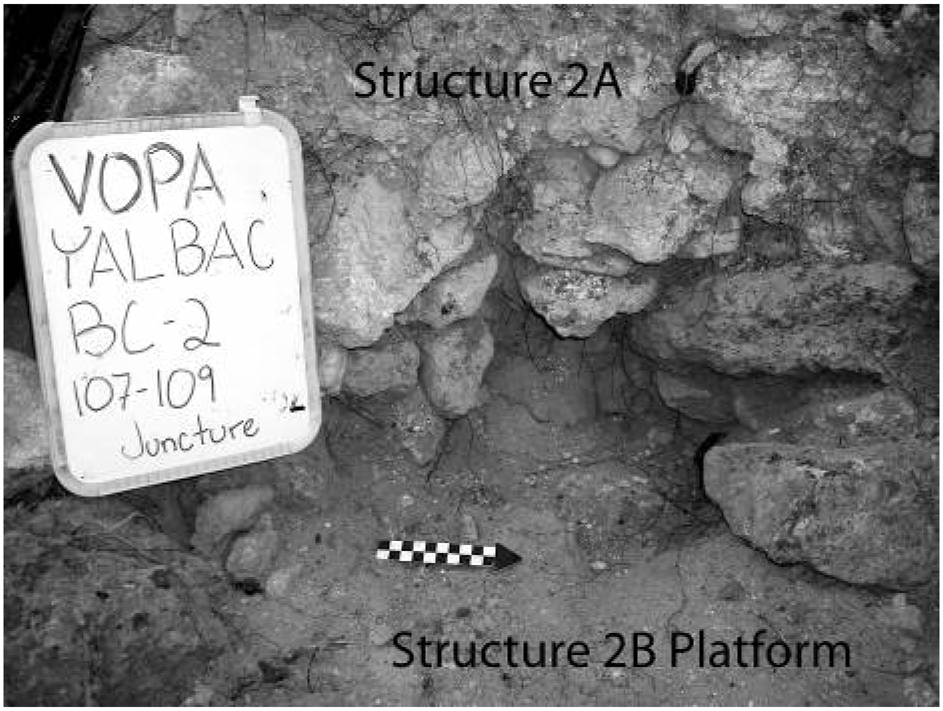

Figure 7. Juncture of Structures 2A and 2B

Classic times. The Yalbac ballcourt fits well into this regional pattern, and its builders even went so far as to conduct a major burning event there, probably representing a ritual termination. The conclusion that can be drawn is that, during the Early Classic period, the Yalbac ballcourt was definitively not in use.

What makes the Yalbac ballcourt unique is its subsequent reuse in a very strange location. Without extensive excavation, there is no way of knowing when 2A, the abutting pyramidal structure, was first built. However, during its final phase, no axial stairway would have been possible on this structure, due to the ballcourt's location. Excavations in 2005 revealed that the two structures were in use simultaneously during the Late Classic period, but it is unlikely that they were originally constructed in this awkward configuration. Therefore, the ballcourt could not have been first constructed after the initial phase of 2A, nor could 2A have been constructed while the ballcourt was in use. Our hypothesis, consequently, has been that 2A was initiated during the period of time after the ballcourt had been terminated. This also suggests that those features of the ballcourt above the plaza level were razed at the time of its termination. Furthermore, in the Late Classic, when regional trends demanded the presence of a ballcourt at Yalbac, it was revived on its original location.

The data collected in 2004 and 2005, and the hypothesis presented, offer a perspective on the early development of Yalbac. Ballcourts, as loci of political interaction, are indicative of a polity's political associations. In this case, it is likely that during the Late Preclassic period Yalbac's elite interacted with those of sites in the Belize River Valley to the south, where other Late Preclassic ballcourts have been found. During the Late Classic, however, many ballcourts sprang up, both in the Belize Valley and Three Rivers Region to the north. Yalbac followed suit, rebuilding its own ballcourt and putting itself back in the game, figuratively speaking.

The question remains as to why the ballcourt was refurbished at the same locus, now that a large pyramidal structure dominated that area. While it is perhaps impossible to know for sure, the explanation may lie in the ritual significance of the ballcourt itself. A ballcourt, with its underworld associations, may have been considered largely immovable. Indeed, it is uncommon in the Maya area that ballcourts are buried to make way for later construction. Rather, most ballcourts, like Yalbac's, display long histories of use and rebuilding, revealing their "enduring quality" (Scarborough 1991:132). Thus, it is likely that the ceremonial or religious requirement of retaining the position of the ballcourt took precedence over the practicality of moving it out of the way of 2A's axial stairway.

Conclusion

The Yalbac ballcourt has revealed an interesting construction history and points to early development at the site. Although displaying a unique arrangement within the site plan, the ballcourt's construction and chronology are consistent with what is known about the ceremonial importance of the ballgame in Maya society. In addition to the information it can provide about local practices, the ballcourt can also be used to tie Yalbac into the political landscape of the region. Since ballcourts were places of political import for Maya elites, their presence and attributes at a particular site are indicators of the relative wealth and status of the elites of that polity.

While many ballcourts have been identified throughout the Maya region, not all of them have been fully excavated. As work at some ballcourts has shown, however, many have multiple phases. Thus a ballcourt that appears to date to the Late Classic may, upon further excavation, be revealed to have been constructed much earlier. Only the further excavation of ballcourts will clarify the role of the ballgame in Belize and in the Maya area as a whole.

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17 UNDERWATER MAYA: NEW FINDS FROM PAYNES CREEK NATIONAL PARK IN 2004

Heather McKillop

In this paper I report the 2004 discovery of 33 Late Classic Maya salt works (A. D. 600-900) in Paynes Creek National Park on the south coast of Belize, including one with the first-known ancient Maya canoe paddle. Sea-level rise submerged the salt works, which are now underwater in Punta Ycacos Lagoon. Twenty-three of the salt works have wooden buildings preserved below the sea floor. The discoveries add important empirical information for evaluating the extent of surplus salt production and river transport during the height of Late Classic civilization in the southern Maya lowlands. The discovery of a wooden canoe paddle from one of the Paynes Creek salt works, Ka'k' Naab,' ties the production of salt to its inland transport by rivers and documents the importance of canoe trade between the coast and the interior during the Late Classic.

Introduction

How did the ancient Maya at cities in the interior of the Yucatan peninsula of Mexico, Belize, and Guatemala obtain quantities of salt in an area where salt is scarce? The traditional interpretation of salt supply was massive import of this basic daily necessity from the salt flats on the north coast of the Yucatan (Andrews 1983). Although other pre-industrial complex societies have transported bulk resources over long-distances, such as salt over the Sahara Desert, Maya archaeologists typically regard that long-distance trade was focused on small quantities of status goods and resources for the dynastic and other elite Maya (Inomata 2001). Following this model, shorter distance trade focused on exchange of food and other subsistence related goods and resources for the bulk of society (McKillop 2004a). The previous discovery and excavation of four salt works in Paynes Creek National Park, including three in Punta Ycacos Lagoon and one in the adjacent mangroves, suggested the possibility that salt was transported in bulk from the coast of Belize by rivers to inland cities during the height of the Classic Maya civilization (A. D. 600-900; McKillop 2002). The coast of Belize is closer than the north Yucatan coast salt flats to the inland cities that formed the core of Late Classic civilization in Belize, Guatemala, and Mexico. That the bowls and jars used to boil brine or seawater in pots over fires were standardized in their dimensions indicated mass-production of the product, salt. But with only four salt works, even mass-production would only supply the salt needs of some of the inland urban Maya. We needed to search for more salt works to test the hypothesis of bulk export of salt from the coast of Belize to Late Classic inland cities.

Methods

A comprehensive underwater search began in April 2004 to locate for salt works in Paynes Creek National Park. Beginning at the eastern arm of Punta Ycacos Lagoon, a large salt-water lagoon in the park, the sea floor was systematically searched for the discarded remains of the salt works. We searched for the fragmentary remains of jars and bowls along with their vessel supports used to hold pots over fires to boil brine to make salt. Previously, we had found sites by looking over the side of the dories for artifacts or walking on the seafloor and looking for artifacts, but this search was not systematic. For the 2004 survey, we adapted the pedestrian survey method used

commonly by archaeologists on dry land: We walked at arms' length in a line, traversing the lagoon back and forth, resulting in the complete surface inspection of the seafloor by visual observation or by stepping on artifacts. While this time-consuming method of underwater pedestrian survey resulted in complete coverage of the seafloor, silt stirred up by walking reduced visibility of artifacts on the seafloor. Moreover, gaping holes were left in the seafloor as we sunk with each footstep, making progress difficult, destroying the integrity of ancient sites we discovered, and breaking artifacts on which we walked. Furthermore, with zero visibility in the sea, we found it difficult to avoid accidentally stepping on stingrays, attracted by the silt.

Figure 1. Team of snorkeling archaeologists traverse the lagoon shoulder to shoulder on Research Flotation Devices (RFDs), without stirring the bottom silt or damaging sites. (*Photo by Heather McKillop*).

We eliminated these problems later in the field season, by further modifying pedestrian survey, using Research Flotation Devices (RFDs) to float on the surface of the water and observe the seafloor using masks and snorkels (Figure 1). Teams of snorkeling archaeologists traversed the lagoon shoulder to shoulder on RFDs without stirring the bottom silt or damaging sites. A datum was established at each underwater site, with a GPS location recorded. The datum was marked by a ½" pvc pipe about 24" in length driven into the sea floor, with the site number written in permanent black marker along the sides of the pipe. The pvc pipes protruded above the sea during fieldwork, but were submerged at the end of the field season so they were not easily located by others. The site numbers were preserved where the pvc extended below the sea floor. We placed flags to mark the locations of artifacts at each site. At the end of the field season, the flags were replaced with plastic straws driven into the sea floor, with one end protruding about 10cm so our team could relocate them the next field season.

Results

We found 33 new sites in 2004 (Figure 2). With eight sites found in 2003, and four from earlier research, we had a total of 45 salt works in Paynes Creek National Park. They were marked by concentrations of broken jars and bowls, the cylinder vessel supports, and charcoal on the sea floor. A sample of measurable rims and vessel supports was collected from the sea floor at each salt works to evaluate inter-workshop variability in standardization of production of salt.

In addition to pottery and a few obsidian and chert stone tools, there was an unexpected discovery; wooden posts protruded from the seafloor through the loose silt. Wooden objects are rarely preserved in the tropical rainforest setting of Maya sites, so the discovery of these posts at the Paynes Creek salt works was unexpected. Wooden objects have been preserved at a few dry caves (Pendergast 1974; Prufer et al. 2004), the oxygen-free mud at the bottom of the Cenote of Sacrifice

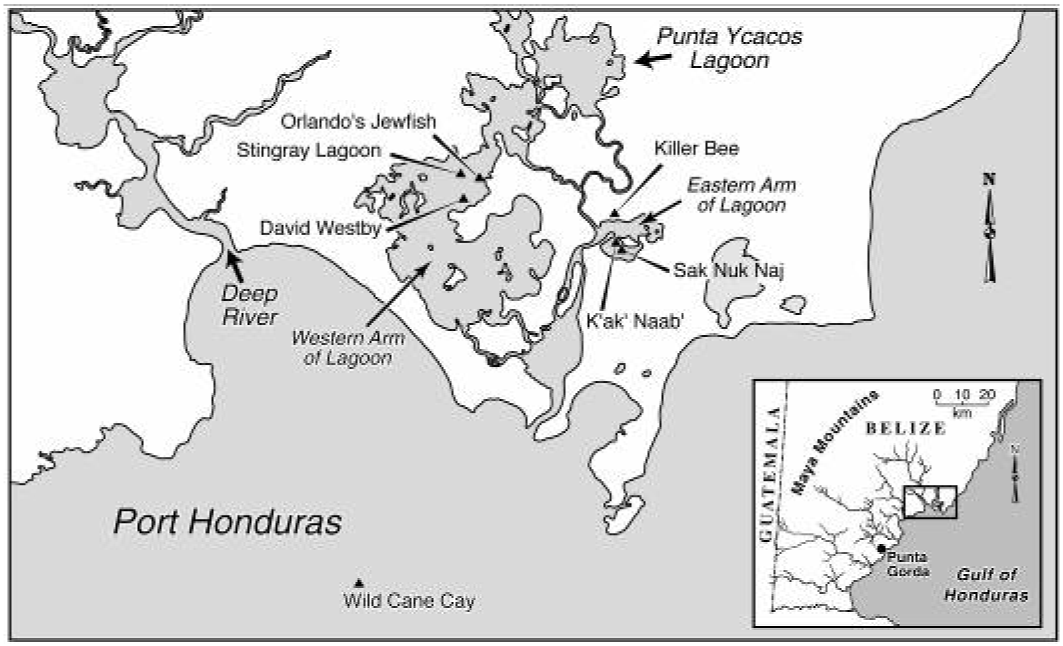

Figure 2. Map of Punta Ycacos Lagoon, Belize. (Drawing by Mary Lee Eggart).

at Chichen Itza (Coggins and Ladd 1992), under the volcanic tephra at Ceren (Sheets 2002), and in dry temple rooms such as Tikal's temple 1. Had we found ancient posts or were they part of the natural landscape of inundated coastal lagoons? Were the posts old, perhaps contemporary with the ancient salt works?

Several "posts" were excavated from the seafloor in Punta Ycacos Lagoon in order to determine if they were culturally modified as structural posts or were just relics of trees that had grown prior to inundation of the lagoon. Excavation of the first post at site 15, ***Sak Nuk Naj***, demonstrated it was modified and not a tree. The post was worm-eaten and black, barely visible as a round stick protruding from the sea floor into the overlying loose silt. However, once below the silt, everything changed. The post extended about one meter below the sea floor, was straight, and sharpened at the lower end. Flake scars were clearly visible on the chipped end of the post. We excavated several more posts, discovering each was straight with chipped lower ends where the post was driven into the ground (Figure 3). Below the silt in the mangrove peat, the wooden posts were unaffected by worms and retained the color and appearance of fresh wood. Some still had bark. Although waterlogged, the wood structure was perfectly preserved

With the discovery of wooden posts at Site 15, we returned to other sites we'd found in the eastern arm of the lagoon to see if there were wooden posts in addition to pottery. They all had wooden posts. By the end of the field season, we had discovered wooden posts at 12 sites, with the possibility that posts would be discovered at some or all of the others when we were able to return to them for further underwater survey.

What preserved the wooden posts in Paynes Creek National Park? The posts were preserved where they were in the mangrove peat that underlay the silt on the sea floor. The peat provided anaerobic matrix devoid of sea worms and other animal life that act to decay wood. The mangrove peat was created by living red mangrove trees (<u>Rhizophora mangle</u>) that

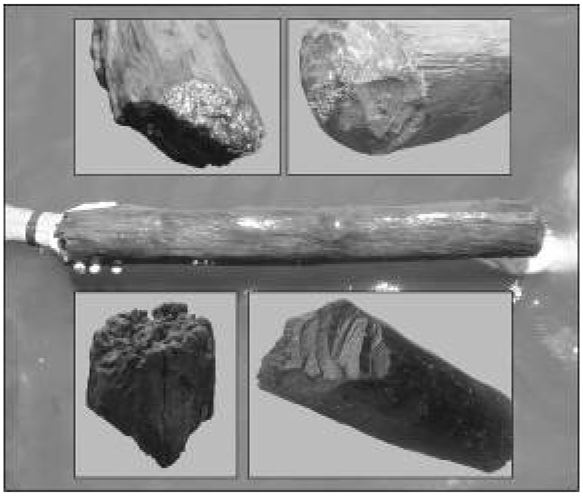

Figure 3. Classic Maya wooden posts used to form walls of buildings at the Paynes Creek salt works. The ***Sak Nuk Naj*** post was radiocarbon dated to the Late Classic period, A.D. 670 to 960 (calibrated to 2 sigma, based on a date of 1300 B.P. ± 60). (Photos by Heather McKillop).

had grown upwards to keep pace with sea-level rise, trapping mangrove leaf matter, sediment and other detritus in their roots. The accumulation of mangrove peat is a good indicator of actual sea level rise worldwide. The inshore lagoon between the Belize barrier reef and the mainland has up to 9 meters of mangrove peat below the sea floor resulting from actual sea level rise since the end of the last ice age, the Pleistocene (Macintyre et al. 1995; McKillop 2002). The posts in Paynes Creek were preserved either because they were sunk into the peat or the peat grew rapidly over them to engulf and preserve them. These possibilities are under investigation as part of the ongoing research on the inundated salt works. The posts formed lines. The concentration of pottery and wooden posts suggested structures for salt production. Preliminary examination of the ceramics indicated they were Late Classic in age. Samples from nine posts were taken for radiocarbon dating.

Construction of Ancient Maya Wooden Buildings

Apart from stone temples and palaces in the centers of Maya cities, wooden buildings dominated the ancient Maya landscape. Ancient Maya buildings with pole walls and thatched roofs decayed. In some cases, the houses left the mounded remains of their earth floors, earth or stone foundations with the discarded remains of household garbage. In other cases, there is no visible evidence of wooden buildings in the modern landscape (McKillop 2005; Somers and McKillop 2005). What did ancient Maya wooden houses and other wooden buildings look like? In addition to pictorial representations on painted pots and carved in stone, and the remnants of buildings preserved in volcanic tephra at Ceren (Sheets 2002), traditional modern Maya buildings provide information on construction techniques, wood used, and length of occupation, for example (Ochoa-Winemiller 2004; Wauchope 1938). The Paynes Creek structures can be compared with modern Maya buildings to see if it is appropriate to use modern buildings as analogues for ancient buildings.

Buildings Used at Salt Works

The wooden architecture at the Paynes Creek sites is defined by wooden posts, beams, and other construction wood. The largest structure found in 2004 is at ***Chak Sak Ha Nal*** (Site 23), where 112 wooden posts define the exterior walls of a rectangular wooden building measuring approximately 21 X 12 m. Inside the structure there are posts forming interior rooms, as well as other construction wood, to be mapped with a survey instrument in 2006. Late Classic salt making pottery is abundant inside the structure, indicating that the structure was used in salt production, storage, or transportation. We observed large pieces of pots preserved on the

seafloor indicating lack of re-use of the salt works or post-abandonment trampling by animals or people (Figure 4). Clearly, rising seas contributed to in situ preservation of materials at the salt works. Many of the pottery sherds include rims, walls, and bases, which will allow reconstruction of the size and shape of the complete vessels, often only possible from complete vessels found in burials and offerings. The size and layout of the structure at ***Chak Sak Ha Nal*** and other salt works will be clarified by mapping the distribution of posts and artifacts beginning in 2005 with a 3-year National Science Foundation project.

Figure 4. The pottery, although broken, consists of large pieces of pots preserved on the seafloor where there was no further use of the salt works or trampling by animals or people after the sites were submerged by rising seas. (*Photo by Heather McKillop*).

K'ak' Naab' Paddle

The recovery of a full-sized, wooden canoe paddle from the ***K'ak' Naab'*** salt works (site 14) ties the production of salt in Paynes Creek to its transportation by canoe. Since no ancient Maya wooden canoes have been discovered, the ***K'ak' Naab'*** paddle is the first primary evidence of prehistoric Maya boat travel and navigation. Wooden posts and the paddle were discovered after returning to the site upon the discovery of wooden posts at ***Sak Nuk Naj,*** site 15. The paddle blade protruded from the mangrove peat into the overlying silt. The edge of the paddle blade in the silt was worm-eaten, but the remainder of the paddle was undamaged.

The ***K'ak' Naab'*** paddle shows the actual size of paddles used by the Late Classic Maya; carved from a single piece of wood, the paddle is 1.43 m in length with a round shaft that is 5 cm in diameter (Figure 5). The grip is rounded and smooth, with flaking scars visible, such as could have been produced by a chert adze recovered from the site. The upper edge of the blade flares at a 90-degree angle to the shaft. The blade extends 8 cm from the shaft on one side, but only 2 cm on the other side. The blade of the paddle is rounded at the tip. A raised area on one side of the blade, 1.40 cm in height, continues the shape of the shaft.

The ***K'ak' Naab'*** paddle is similar in shape to paddles in ancient Maya art, which show paddles and their use in canoes. Images incised on long bones from Late Classic Burial 116 in Temple 1 at Tikal show the Stingray Paddler god and the Jaguar Paddler god paddling a canoe (Trik 1963; Figure 5). Like the ***K'ak' Naab'*** paddle, their paddles have a straight handle without an expanded grip. The blades are straight along the upper side, rounded at the sides and at the tip. The scene indicates that Classic Maya held paddles by the shaft, with one hand near the top and the other hand above the blade. Similar paddles are depicted in a scene on a painted mural dated to the Postclassic at Chichen Itza (Thompson 1951). Other artistic depictions of canoeists paddling are known from Piedras Negras, recording a Yaxchilan emissary's trip downstream to attend a ruler's accession to the throne.

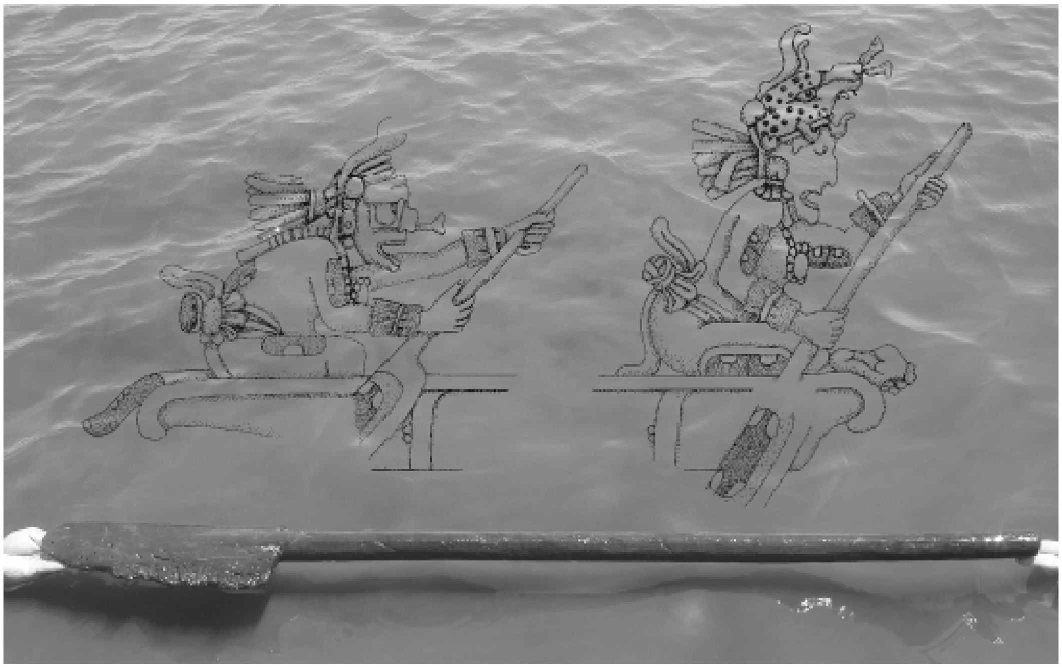

Figure 5. Late Classic Maya wooden canoe paddle from ***K'ak' Naab'*** underwater salt, radiocarbon dated to A.D. 680 to 880 (calibrated to 2 sigma, based on a date of 1300 ± 40 B.P.). The drawing shows the same type of paddle depicted on a Late Classic bone carving from Tikal. *(Photo by Heather McKillop; drawing by Mary Lee Eggart from Trik 1963: Figure 5).*

Since the ***K'ak' Naab'*** paddle so closely resembles ancient artistic depictions of paddles, perhaps images of canoes in the same depictions also provide accurate analogues. Artistic depictions of canoes are similar to boat models from several Classic Maya sites, including Altun Ha and Moho Cay, where the boat models were carved from manatee ribs (McKillop 2004b; Pendergast 1982). There are clay boat models from Orlando's Jewfish and Stingray Lagoon, other salt works in Punta Ycacos Lagoon (McKillop 2002).

The ***K'ak' Naab'*** paddle was carved from a species of Manilkara, probably M. sapote in the family Sapotaceae. Although waterlogged, the wood is fresh in appearance, preserving the original light brown color of the wood. Sapotaceae wood also was identified from Late Classic midden deposits at the nearby island community of Wild Cane Cay (McKillop 1994). A wooden spear from Actun Polbilche cave, Belize was made from M. sapote (Pendergast 1974). Although M. sapote is better known for its sap that provided chicle for chewing gum, the wood is a durable hardwood. Deciduous hardwoods do not grow in the mangrove ecosystem surrounding the lagoon, or on the adjacent pine savannah. However, they form the rainforest south of Punta Ycacos Lagoon, along the Deep River.

Radiocarbon dating and analysis of associated ceramics date Belize salt production and canoe travel to the height of Late Classic Maya civilization when the demand for salt was greatest in the interior cities. Wood from the ***K'ak' Naab'*** paddle was radiocarbon dated to 1300 ± 40 B.P. A post from the nearby ***Sak Nuk Naj*** salt works was radiocarbon dated to 1300 B.P. ± 60 (McKillop 2005b). After calibrating the raw dates and correcting them by carbon 13/12 isotope analysis, the calibrated dates fall within the Late Classic, with A.D. 680

to 880 for the K'ak' Naab' paddle and A.D. 670 to 960 for the ***Sak Nuk Naj*** post (McKillop 2005b). Both dates fall in the range of a radiocarbon date of A.D. 670-870 from wood charcoal from the nearby Stingray Lagoon site (McKillop 1995, 2002). The ceramics from ***K'ak' Naab'*** and ***Sak Nuk Naj*** resemble the Late Classic ceramics identified at Stingray Lagoon (McKillop 2002).

Infrastructure of Salt Production

The discovery of more than the original four salt works (McKillop 2002) meant production of this basic resource was mass-produced, as indicated by studies of standardization of the vessels suggesting mass production of the product. Moreover, production was extensive, as indicated by the number of additional sites discovered. With a high density of salt works in the part of the lagoon recently surveyed, the possibility of extensive salt production was staggering.

The discovery of ancient wooden posts indicated that the artifacts and wooden posts were the intact remains of salt workshops and that the infrastructure involved in production was far more extensive than previously thought. My working model of production was that each workshop included a group of salt workers, perhaps a kin group, boiling seawater or brine in a couple of dozen or more pots over fires and this activity was an outdoor activity carried out seasonally in the dry season at many salt workshops in the area. Instead, I surmise now that production was indoors. Like modern and historic salt production elsewhere in many parts of the world (Adshead 1992), buildings were used for the boiling process, and also for storing pots, fuel, the loose salt and salt cakes, furniture, and other equipment used by the salt workers (Reina and Monaghen 1981). There was an extensive infrastructure involved in the construction of buildings, storage of materials and goods for the production process, production of salt by boiling, and storage of salt prior to transport elsewhere for use. Salt production at the Paynes Creek salt works was more than boiling brine or seawater over pots and over fires to produce salt.

The Implications for Understanding of Classic Maya Economy and Trade

Archaeological discovery of multiple salt works on the Belizean coast represents surplus production of salt destined largely for the inland Maya during their Late Classic peak, underscoring the importance of non-state controlled workshop production in pre-industrial societies (McKillop 2005b). The discovery of 45 salt works and an ancient wooden canoe paddle demonstrate there was extensive, non-state controlled salt production and the means of transport by canoe to inland Maya cities. In general, the subsistence economy of the Late Classic Maya was more complex than previously considered and included mass production of goods outside urban areas and beyond state control (McKillop 2005b). This finding is important because it furthers our understanding of pre-modern, indigenous systems of production and exchange, in particular the extent of political control of the economy. The Punta Ycacos research indicates salt production on the coast of Belize was extensive, dated to the height of Maya civilization when inland demand for salt was at its greatest, and that production and canoe transportation of salt were locally controlled by the coastal Maya instead of the geographically distant Maya state at cities in the interior. In addition to the Paynes Creek salt works, salt production is documented elsewhere along the coast of Belize suggesting the Belize coast provided a closer source of salt than that produced on the north coast of the Yucatan (Andrews and

Mock 2002). The discovery of the canoe paddle from ***K'ak' Naab'*** documents that the transportation of salt was by water, a viable option for moving bulky resources up nearby rivers to supply the large populations of the Late Classic cities in the southern Maya lowlands.

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18 UXBENKA ARCHAEOLOGICAL PROJECT (UAP): SITE SETTLEMENT IN THE RIO BLANCO VALLEY, TOLEDO DISTRICT, BELIZE

Keith M. Prufer, Andrew Kindon, and Phillip Wanyerka

This chapter discusses recent archaeological work conducted at Uxbenka, a moderately sized site in the foothills of the Maya Mountains in the Toledo District of southern Belize. Epigraphic data indicate that it was settled around AD 250, a time of expansion of political influence from Tikal, with whom Uxbenka may have been aligned. Uxbenka was occupied until around AD 900. Research in 2005 provided data that Uxbenka is considerably larger than previously thought. The site has several large plaza groups with restricted access and monumental architecture. There are also at least two ballcourts at the site. New monuments discovered in 2005 confirm that Uxbenka has an Early Classic component. These data suggest that Uxbenka is the earliest site in southern Belize that had carved stelae and may have been well established as a secondary Maya capital by the mid-fifth century AD.

Introduction

Uxbenka is located along the San Antonio-Jalacte Road in the Toledo District of southern Belize (Figure 1), 10 km from the border of Guatemala. The site is located directly adjacent to the roadway, and portions of the site are bisected by the road, though dense secondary vegetation obscures any view of architecture from the road. Prior to 2005 little archaeological work had been done at Uxbenka. Parts of the site were first documented during Norman Hammond's survey of southern Belize in 1970 (Hammond 1975). In 1989 and 1990 Richard Leventhal surveyed and tested limited portions of the site as part of his regional Southern Belize Archaeological Project (SBAP). Leventhal mapped the now well known stelae plaza and documented several large outlying groups. He also conducted a series of test pits and small excavations beneath monuments in an effort to secure chronological data on the development of the site. During his investigations he encountered an intact, but collapsed, tomb in the floor of the Stelae Plaza. While Leventhal's excavations did not produce any definitive Early Classic contexts, he remained convinced that Uxbenka was one of the earliest sites in southern Belize. This assessment was in no small part due to iconographic analyses of obvious Early Classic monuments from the site Stelae Plaza (now referred to as Group A). Leventhal (1990, 1992, and in an unpublished paper with Linda Schele) became the first to recognize that one of the monuments at the site potentially linked Uxbenka to Tikal.

Between 1990 and 2005 archaeological investigations at the site languished, and the only research conducted were periodic assessments of the over one-dozen carved monuments scattered across the Stelae Plaza (e.g. Wanyerka 1996). While these reports added significantly to the corpus of epigraphic data from southern Belize, and documented additional monument fragments not discovered by the SBAP, no new archaeological data on Uxbenka was produced during that time. In 1996, the Institute of Archaeology watchman turned over to the government a Middle Preclassic (ca 400 BC) jade spoon supposedly reportedly found atop a structure by an unknown villager, but more likely recovered from one of the many looted tombs that dot the site (Healy and Awe 1996).

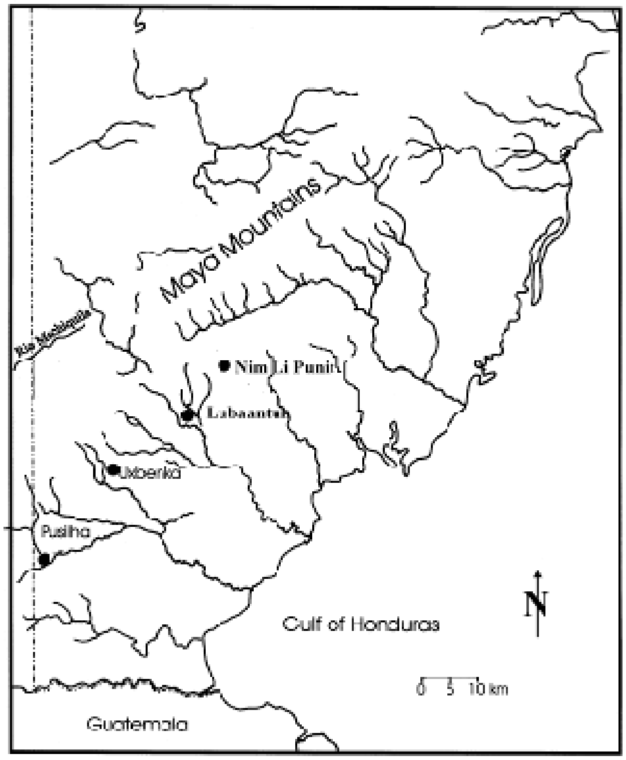

Figure 1. Map of southern Belize showing the location of important archaeological sites in the foothill region. Map by K. Prufer.

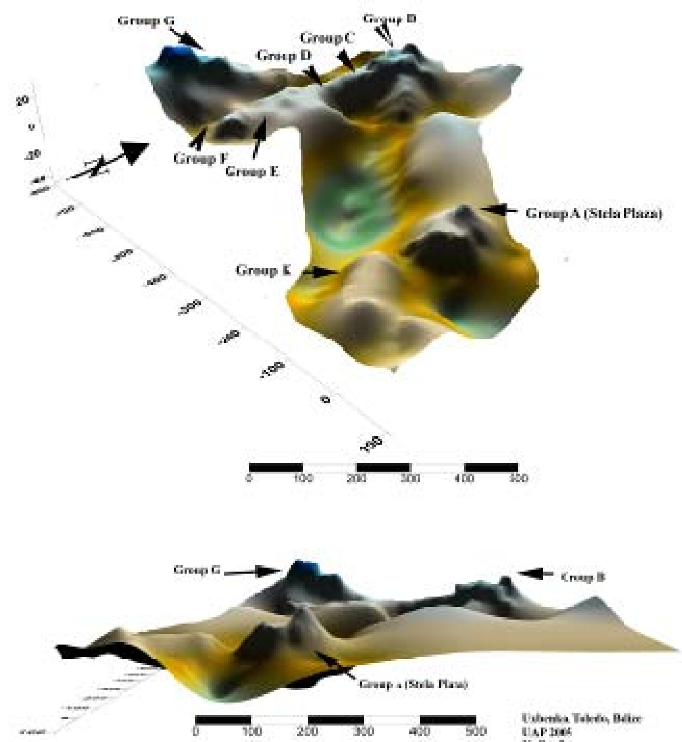

Figure 2. Surface maps of the entire site core at Uxbenka. The plan map (top) is viewed from above and facing to the northwest. The profile map (below) is facing west. *Maps by K. Prufer and A. Kindon*

Unfortunately, due to the dispersed nature of the site core, and despite the presence of a DOA watchman for several years, looting activities and vandalism have resulted in numerous depredations. A 2002 Environmental Impact Assessment (McAnany et al. 2002) for a road-widening project indicated that the settlement associated with Uxbenka may be extensive and dispersed across a large area.

Currently, Uxbenka, located in the low hills above the coastal plain, and *Ek Xux*, located in the Maya Mountains, are the only southern Belize surface sites known to have settlements that predate AD 500 (Prufer 2005), although cave investigations in all areas of southern Belize have produced substantial Middle Preclassic through Early Classic contexts (Prufer 2002). The lack of Early Classic settlement in a region surrounded by earlier sites has puzzled numerous scholars. It may well be that the relative isolation of the region played a role in producing a unique developmental trajectory. Southern Belize is circumscribed geographically and difficult to access, both now and in the past. To the north it is bounded by inhospitable pine-barrens, to the west by the formidable Maya Mountains, to the south by the swampy Temash and Sarstoon River basins, and to the east by the Caribbean Sea. Though it would be imprudent to suggest that these geographic features posed barriers to communication or trade, they may well have served as impediments to social contacts in the past, much as they did for most of the 19th and 20th centuries (see Thompson 1930). For residents of the Petén, southern Belize is most easily accessed through a passage in the low hills into the southern Petén, a passage that runs directly by Uxbenka and may have been a factor in the founding and long occupation of the site. Hammond (1978) has speculated that this may have formed a principal trade route in antiquity. The ridge that houses Uxbenka Groups B-F forms a perfect vantage point from which to observe traffic passing through this valley, which extends from a series of steep karst hills to the south to the escarpment rising into the Maya Mountains to the north.

Based on its relative geographic isolation, the presence of a passage into the Petén, idiosyncratic hieroglyphic texts, and unusual architectural styles southern Belize has been described variously as a "Maya realm" (Hammond 1975) or a "Maya cultural sphere" (Leventhal 1990, 1992) indicating that previous researchers see sufficient internal continuity in archaeological contexts to refer to southern Belize in a regional sense. Furthermore, several researchers have observed that the distribution of sites across varied landforms in southern Belize may indicate their economic function for resource exchange with the southeast and the central Petén (Dunham and Prufer 1998; Graham 1994; McKillop 1996; Prufer 2002). Southern Belize is particularly rich in resources, both mineral and botanical (Dunham and Prufer 1997; Graham 1987). Geological and botanical resources from the volcanic Maya Mountains may have played a role in the development of sites in the foothills of the mountains (Prufer and Wanyerka 2001). The hills around Uxbenka and Pusilha contain some of the richest soils in the Maya lowlands and may have been important for cultivation of cacao and other agricultural products (Wright et al. 1959). Even today the lands around Uxbenka are almost continuously farmed without fertilizers or the need for long fallow periods. Given its strategic location to potentially mediate or control trade, and its agricultural fertility, it is not surprising that Uxbenka flourished throughout the Classic Period.

Despite nearly a century of archaeological work in the region, the dynamics of how southern Belize was settled remain largely unknown. If Preclassic people resided in southern Belize we have no evidence of their settlements, despite speculation that such a resource-rich region would not likely be vacant (Dunham and Prufer 1998; Leventhal 1992). Until recently the discussion of early settlements in southern Belize were limited to two sites thought to have Early Classic components, Uxbenka and Pusilhá, as well as limited data from a handful of cave sites (Prufer 2002). Recent excavations at Pusilhá indicate that it was probably not occupied prior to AD 500 (Bill and Braswell 2005) despite retrospective monument dates indicating earlier dynastic associations. We can now add *Ex Xux*, located in the interior of the Maya Mountains, to the list of Early Classic sites, with a possible Late Preclassic settlement that extended through the Early Classic.

Neighboring regions were settled prior to the Early Classic. To the north, in the Stann Creek drainage and along the Placencia coast, there are settlements beginning in the Middle Preclassic and extending through the Postclassic (Graham 1994). In the southwestern foothills of the Maya Mountains in the Petén, the Atlas Arqueológico de Guatemala documented a number of Preclassic settlements suggesting the presence of stratified rural communities by at least AD 100 (Laporte 2001).

Today, Uxbenka is a substantial Classic Period site bordering less than 100 m north and east of residential compounds of the rural Mopan Maya farming community Santa Cruz, and less than 200 meters from the village center. The ruin is situated on lands of the San Antonio Indian Reservation, and portions of the site are currently under shifting cultivation with corn, bananas, okra, cacao and other subsistence crops. While the residents of Santa Cruz are fully aware that their "modern" village is situated upon the site of an "ancient" community, they have little knowledge of the significance of Uxbenka in terms of national or regional archaeological reconstructions. Because of Uxbenka's proximity to this indigenous Mayan village, and growing interest by the Belize Institute of Archaeology in the development of the site as a tourist destination, the UAP has also undertaken an applied social and cultural component. The collaborative archaeological-social anthropological nature of the project is intended to foster a constructive relationship between Santa Cruz village and the project researchers and to create a climate for sustainable community development situated around an archaeological cultural resource.

Archaeological Survey and Mapping in the Site Core:

In the 2005 field season the UAP specifically set out to better understand the physical layout of the site. This involved two activities. First, we assessed and mapped both the size and spatial layout of the Uxbenka site core and all major architectural groups that make up the civic and ceremonial groups. Second, we began the process of documenting the settlement through survey, mapping, and the collection of spatial data.

The core area of the ruin, which appears to represent both the civic, ceremonial, and elite residential components of the ancient community, consists of seven architectural plazas spread across three sets of ridges and hilltops (Figure 2). Though analyses of the spatial data is still ongoing, and no excavations have yet been conducted, the layout of the site indicates that these plaza groups can be roughly grouped into three clusters: The Stelae Plaza (Group A); a set of 5 conjoined plazas

forming the core ceremonial groups at the site (Groups B-F) and an 'acropolis' residential group (Group G) located atop the highest hill in the site core.

Group A is the well known Stelae Plaza, which was initially documented by Richard Leventhal (Figure 3) in the late 1980s and has periodically been open to the public over the last 15 years. This group is located atop a leveled and modified hilltop and consists of six structures surrounding a small (30 m x 50 m) plaza that contains a minimum of 22 carved and uncarved monuments and stela. Group A is dominated by a large (10 m high) triadic temple building oriented facing south. This building likely once had a substantial frontal stairway that has been partially looted and collapsed. The rest of the buildings in this group are modest. The collapsed plaza tomb located and excavated by Leventhal is still intact. Accessing Group A today, and likely in the past, is by two stairways leading up first onto a flattened terrace (where at least one Early Classic monument once stood) and then up a second stairway crossing a low platform into the plaza. Group A is linked to Group K, a large open plaza bounded by three platforms and a long range structure. The link between Groups A and K is established by a set of stairways oriented to face each other.

At the base of the Group A hilltop, directly below Structure A-5, we documented a small modified spring or well (see Figure 3). The well is a 110 cm diameter circular depression carved from soft limestone at the point where a small spring emerges from a crevice in the bedrock. The area around the well was walled in antiquity with dressed block, perhaps indicating that the well was part of a larger water containment feature. Further excavation and clearing will clarify the size, organization, and function of this feature. In a small residential group just east of Group A we also noted the presence of Early Classic and Late Preclassic ceramics in looted contexts, though these were not collected. This group of modest .5 to 1.5 m high buildings contained at least one well made cut stone tomb that had been looted in the last 10 years, based on vegetation in the disturbance.

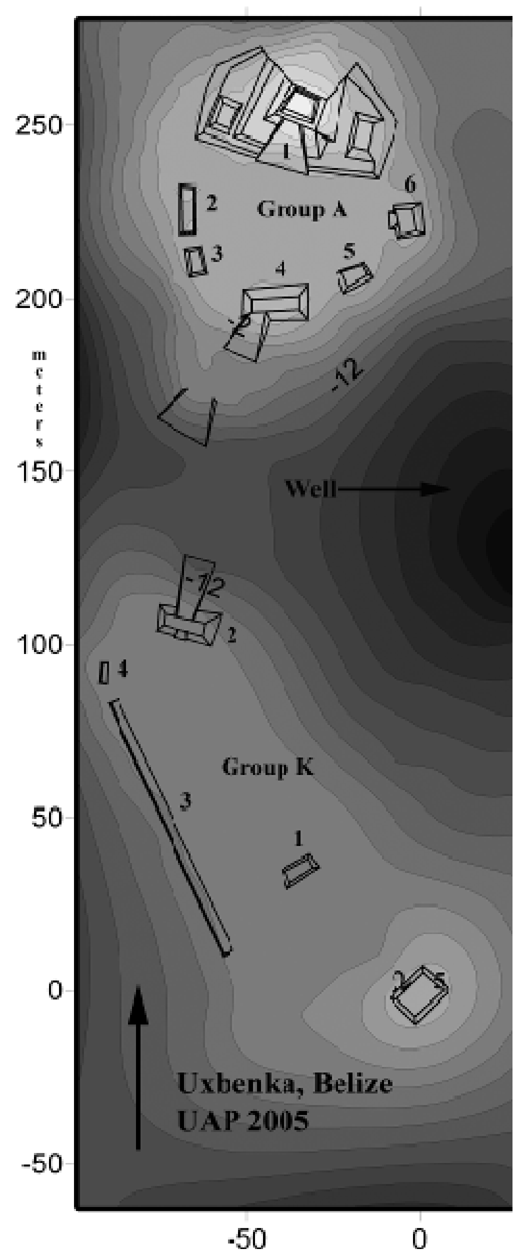

Figure 3. Topographic map and line drawings of structures in Group A and Group K. Note that each group is accessed by stairways facing onto each other. Map by K. Prufer and A. Kindon.

Groups B through G (Figure 4) consist of a series of descending and conjoined plaza groups linked by stairways and low steps. Group B, the highest of these plazas, is located 450 m NW of Group A and dominates the 550 m north/south modified ridge. It consists of 9 structures including a south facing temple building, four patio structures, and a large ballcourt. Its access appears to have been highly restricted. One structure is shared between Group B and Group C, with a low stairway facing north towards the ballcourt (Strs. B-7/8), a temple building (Str. B-4) and a second larger stairway leading into the plaza of Group C. The largest structure in Group B is the temple building (Str. B-4) which is almost 8m in height. Group B houses architecture almost as tall as the Stelae Group (Group A) and more massive. Where architecture is exposed it reveals finely dressed blocks, many of which were cut at angles to create slopping walls, and covered with layers of plaster. One of the Ballcourt structures (B-7) has been badly looted, revealing that the entire core of the building was constructed of cut-stone blocks rather than dirt or rubble fill. At least half of the buildings in this group have not been damaged by looting. The hillsides surrounding Group B are steep and dressed with cut stone terraces creating the visual effect of exaggerating the size of the architectural group considerably.

From Group B the abovementioned stairway descends into Group C, which consists of an open plaza ringed by cut stone terraces and three small buildings (Figure 5). Aside from the stairway into Group B, there is no monumental architecture in Group C. Group D is located below Group C and has two major features: a ballcourt located along the western edge of the plaza and a large (60m x 70m) low (<2m high) platform that may have been partially or completely paved with large limestone slabs. Group D is separated from Group E by a single raised step and a low, but badly looted platform. Group E consists of two range structures along the east and west edge of the ridge and facing onto Groups A and G. The ridge terminates with Group F, a three-structure group that faces directly towards Group G, the Acropolis. Quite interestingly, looting off the sides of structures in this group has produced scatters of Early Classic ceramics, providing clues for future excavations targeting the early component at the site.

Group G, the 'acropolis' consists of two plaza groups atop a flattened hilltop (Figure 6). The top 1/3 of the hillside (between 12 and 30m high) had been faced with cut stone giving the hill the massive appearance of a large platform. However, the architecture atop the hill is quite diminutive, consisting of 6 small structures (Figure 7), the highest of which is just slightly over 3.5m tall. Both hilltops of Group G have commanding views across the entire valley and into the foothills of the Maya Mountains, several miles distant. The upper terrace at Group G is at least partially constructed from cutting away the hillside to create the effect of a two-tiered platform. On the north face of the upper terrace at least three exposed and looted plaza tombs were mapped. These appear to be similar to the plaza tomb excavated by Leventhal in Group A in 1990.

We have also initiated a settlement survey in order to begin to assess the organization and distribution of residential compounds of the non-elite population that resided at Uxbenka. In 2005 we specifically intended to determine whether settlement architecture was confined largely to hilltops and ridgelines. This determination has important methodological implications for future research designs involving settlement surveys in the region. Based on pedestrian survey and spot-checking of hilltops at varying distances from the site core, it now

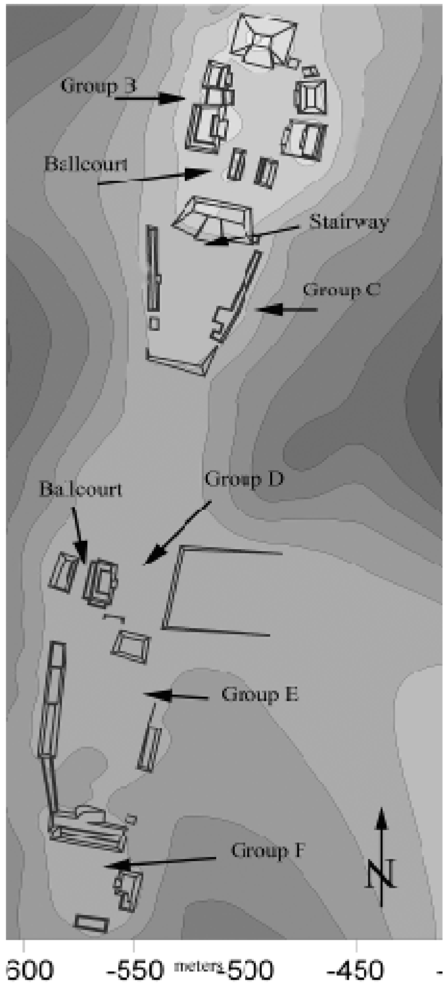

Figure 4. Surface maps of the ridge where groups B through F are located. The ridge slopes from the highest point (Group B) to the lowest (Group F). Map by K. Prufer and A. Kindon

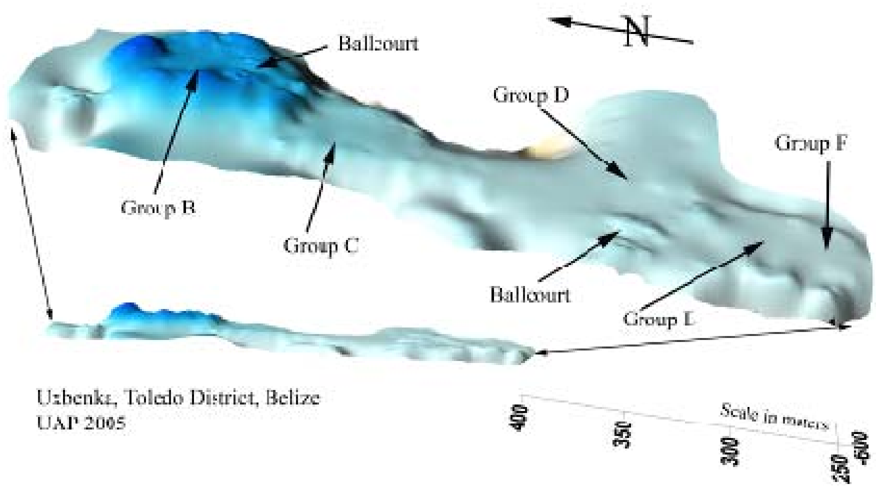

Figure 5. Topographic map of the ridge atop of which Groups B though F are located. The locations of both ballcourts are also marked. Map by K. Prufer and A. Kindon.

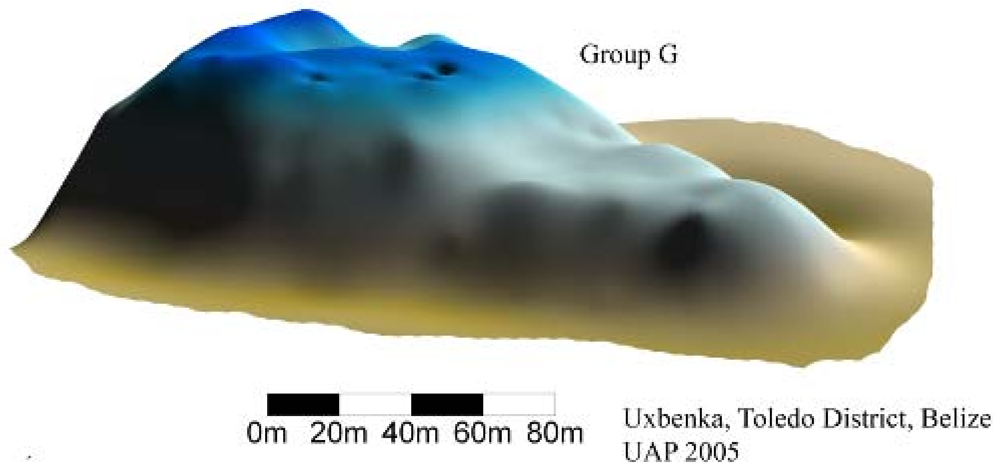

Figure 6. Surface map of Group G, Acropolis, viewed from the southeast. The shallow depressions on the upper terrace are looted tombs. Map by K. Prufer and A. Kindon.

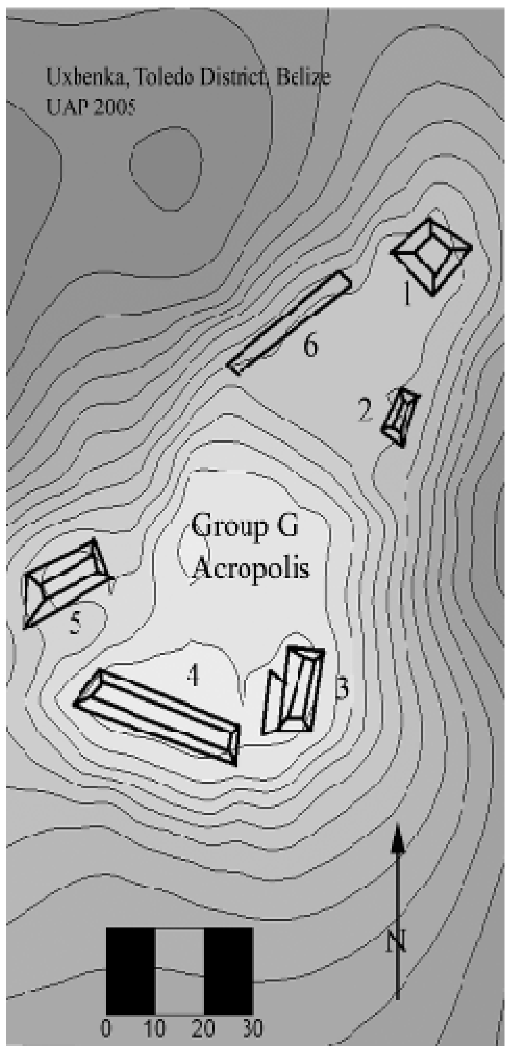

Figure 7. Topographic map of Group G, Acropolis, showing the location of structures within the group. Map by K. Prufer and A. Kindon

appears that residential architecture is confined to hilltops and ridgelines, and that no residential architecture is located between hilltops or in small valleys. A total of 19 residential groups, consisting of at least 60 structures were documented and mapped to the east, west, and north of the site. No studies have yet been conducted to the south of the site, along the Rio Blanco drainage, but we have been told by local informants that there is extensive, and in some cases quite large, architectural groups in that area.

Epigraphic Findings:

Fieldwork for the epigraphic portion of the UAP was conducted between 3 June and 2 July, 2005. Epigraphic studies were limited to the Stelae Plaza (Group A) area of the site which is where all of the known monuments are found. We anticipate that subsequent seasons will produce additional epigraphic data from other areas of the site. In 2005 we accounted for all the known monuments and sculptures, cleaned and reexamined the extant monuments, and began to explore the Stelae Plaza for new monuments and monument fragments. We also relocated selected monuments from the site core to the Community Center in nearby Santa Cruz containing sculptural fragments. This work was overseen by Phillip Wanyerka with assistance from project photographer Jack Sulak. All project members, including workmen, were involved in efforts to locate new monument fragments.

All of the extant monuments at Uxbenka are found in Group A, the Stela Plaza. While the majority of these date to the Late Classic (AD 500-900), Uxbenka's Early Classic (AD 250-500) monuments may be among the earliest dated stelae in Belize. One nearly complete monument provides the most direct evidence for connections between Uxbenka and Tikal during that time period. Uxbenka Stelae 11 has been dated stylistically to within one K'atun of approximately 8.18.0.0.0 (AD 396). It records the name of an Early Classic Tikal ruler: *Chak Tok' Ich'aak I* (Grube et al. 1999), who was also quite likely the last ruling member of the first Tikal dynasty (a more detailed discussion of the corpus of monuments from Uxbenka can be found in Wanyerka, 2005).

During the 2005 season we conducted inventories of all 22 of the known stelae (both carved and uncarved) and of the 41 plain monument fragments located in the Stelae Plaza (Group A). With the exception of one fragment, all of the previously documented carved monuments were accounted for, cleaned, reexamined, photographed, and checked against extant drawings. Following the clearing of the Stelae Plaza, and an extensive search of the area, it was determined that a substantial portion of the right lateral half of Stela 21 (an Early Classic monument first reported by Leventhal) is missing and presumed to have been stolen. This monument fragment depicts a fine-line portrait of an Early Classic ruler holding an undulating Serpent Bar. While this fragment has been previously documented, its loss is significant and speaks to the need for increased protection of the monuments at Uxbenka.

In the course of locating and verifying each monument and monument fragment, two previously unknown carved monument fragments belonging to Stela 6 were identified (Figure 8). Re-fitted, it now appears that Stela 6 measured over than 3.5m in height and may depict a finely dressed royal personage. While no new hieroglyphic inscriptions were found in association with these two new fragments, the figural scene likely portrays a standing male (facing left) possibly adorned with an

elaborate headdress. Unfortunately, much of the monument is badly eroded. What is quite interesting about this monument is that the central fragment has been known and numbered for years. However, the carved image was obscured by thick layers of lichen and/or mosses. It was only in the process of cleaning the monument that the image was revealed.

While clearing vegetation atop the southeastern corner of Str. A-5, in the main Stelae Plaza Group (Group A) a workman directed our attention to a fragment of Stela 23, lying face down alongside a looter’s pit (Figure 9, also see Figure 3 for a map showing the location of Str. A-5). The stela fragment is carved from fine-grained sand or mudstone, measuring 31 cm high x 23 cm wide x 24 cm thick. The text is extremely well preserved with an almost “cookie cutter”-like relief. Carved on the front of the fragment is a short six glyph block text and a partial figural image of a right foot. The text and image clearly represent only a small portion of the monument. This suggests that a portrait of a standing Uxbenka king stills lies somewhere at the site. Given the remarkable preservation of this text, and the likelihood that it came from a sealed subsurface context, we are hopeful that excavations will produce more fragments of this monument.

Figure 8. Uxbenka Stela 6. The line drawing on the left is based on the mosaic of monument fragments reconstructed digitally. Photograph by J. Sulak, drawing by P. Wanyerka.

The Stela 23 fragment is in an Early Classic style and records an Initial Series date of 9.1.0.0.0 6 *Ajaw* 13 *Yaxk’in* (25 August, AD 455). Photographs of the text were circulated to epigraphers Nikolai Grube, Simon Martin, David Stuart, and Peter Mathews. All four of them concur that the date of this inscription refers to the Period Ending of 9.1.0.0.0 (personal communications to Wanyerka, September 2005).

The text begins with a beautiful representation of an Early Classic *Ajaw* (Lord) glyph. Recorded at A1 is the *Tzolk’in* day name 6 *Ajaw*. Immediately following the *Tzolk’in* is a truncated Lunar or Supplemental Series featuring the Lord of the Night. In this case G9 appears to have been recorded since the main sign appears to feature a half-darkened *K’IN* sign. The text continues at A2 with an unusual form of what is likely Glyph D. According to Nikolai Grube this example may be a “New Moon” reference (personal communication to Wanyerka, September 2005). The only other known glyphic combination of a *ti’ s*yllabic sign and the *CH’EEN* (T769) logograph is found on the left side text of La Milpa Stela 7, a monument that has been proposed to date to 9.17.10.0.0 (Grube 1994). The context for both texts suggests that the scribe was implying that the moon

Figure 9. Line drawing and photograph of Uxbenka Stela 23. The Calendar Round date of the monument is 9.1.0.0.0 6 *Ajaw* 13 *Yaxk'in*, or 25 August, AD 455. Drawing by P. Mathews, photo by P. Wanyerka.

was no longer visible. According to the Vienna Dictionary, the Yukatek term *binaan u, binan u tu ch'en uh* translates literally as "the moon gone, the moon has gone to her well" (Thompson 1950:236). Though we cannot specifically read this particular form of Glyph D, the *ch'een* or "cave" sign leaves suggests that this was the intended meaning. On the Period Ending date of 9.1.0.0.0 the moon was 28.9 days old (25 August, AD 455) which would mean that the moon would not be visible, hence in the new moon. Following Glyph D is an unusual form of Glyph C, this time recorded with a *na* prefix indicating "first" along with a highly stylized form of the Jaguar-Eye element and "flat-hand" of the standard Glyph C collocation. This probably indicates that the first lunation had ended. Following at A3 is Glyph A, stating that the lunation was 30 days long. The *Haab'* date is recorded as 13 *Yaxk'in*. Taken together, the Initial Series and supporting lunar data record the Long Count date of 9.1.0.0.0 6 *Ajaw* 13 *Yaxk'in*, making Stela 23 one of the earliest dated stela in southern Belize.

Conclusion and Future Directions:

In 2005 the UAP set out to document the size and spatial layout of the site core at Uxbenka and to assess the condition of the site for future archaeological research. These goals have been met, allowing us to now develop a strategy for excavations at the site beginning in 2006. Our epigraphic goals were to document the extant monuments in Group A and to search for new monuments and monuments fragments. Our success in locating new monument fragments, some of which are well preserved, is encouraging. We are hopeful that excavations in Group A, and continued

clearing of vegetation in the site core, will produce additional monuments and fragments. Our social research goals were to establish a working relationship with the village of Santa Cruz, where Uxbenka is location. These goals were also met, and we feel we have developed both a spirit of collaboration and friendship with the village leadership and the residents of Santa Cruz Village. Their support will be critical to our future success.

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19 IN THE LAND OF THE AVOCADO: RECENT ARCHAEOLOGICAL INVESTIGATIONS AT PUSILHA, TOLEDO DISTRICT, BELIZE

Geoffrey E. Braswell and Sherry A. Gibbs

The Late Classic period saw the proliferation of secondary states throughout the Maya lowlands. Since 2001, the Pusilha Archaeological Project (PUSAP) has studied the growth of one such site in the south-eastern periphery of the Maya world. In this chapter, we examine recent research at Pusilha, Toledo District, Belize, with a special focus on external economic relations. These relations suggest to us that the inhabitants of the site may have come from the southern Peten at or shortly before the beginning of the Late Classic period. Our data are drawn especially from excavations conducted during the 2004 and 2005 field seasons. Several burials, including a royal tomb, were discovered during these excavations.

Introduction

Since 2001, the Pusilha Archaeological Project (PUSAP) has conducted archaeological investigations at Pusilha, Toledo District, Belize. Preliminary results of the first three of our four field seasons were presented at the First and Second Belize Symposia. In publications resulting from those conferences (Bill and Braswell 2005; Braswell et al. 2004a), we describe our research questions, delineate the dynastic history of the city as revealed by Project Co-Director Christian Prager's epigraphic study of the then-known 22 carved stelae and hieroglyphic stair, and outline a preliminary ceramic sequence of the site. In this paper, we will review, expand, and refine upon our initial conclusions, and also discuss the investigation of seven structures excavated during the 2004 and 2005 field seasons. Excavations in one of these structures revealed an important tomb belonging to a ruler of the site.

The Maya city of Pusilha, whose ancient name was **Un** or avocado, is located in the village of San Benito Poité, Toledo District, less than 2-km east of the border with Guatemala (Figure 1). Rediscovered and explored by archaeologists from the British Museum Expedition to British Honduras in 1927, it was one of the first sites in Belize to be systematically investigated. At that time, the best-preserved stelae from the site were cut up and transported to London. Sylvanus Morley included a lengthy discussion of their calendrical glyphs in The Inscriptions of Peten (1938), but despite their early fame, the Pusilha stelae have all been in storage at the British Museum for decades. In addition to the monuments, the pottery of Pusilha was viewed by early investigators as extraordinary. Thomas Joyce's (1929) description of ceramics excavated from Pottery Cave, a large natural chultun at the base of an important residential group at Pusilha, was one of the very first ceramic analyses published for the Maya Lowlands and provided important comparative data for research conducted at Holmul and, later, Uaxactun. Finally, the ancient Maya bridge spanning the Machaca River also drew the attention of archaeologists to Pusilha.

Despite its large size, a number of carved monuments, a unique work of engineering, and importance to ceramicists working in the early 20th century, very little systematic research has been conducted at Pusilha during the past 70 years. As part of

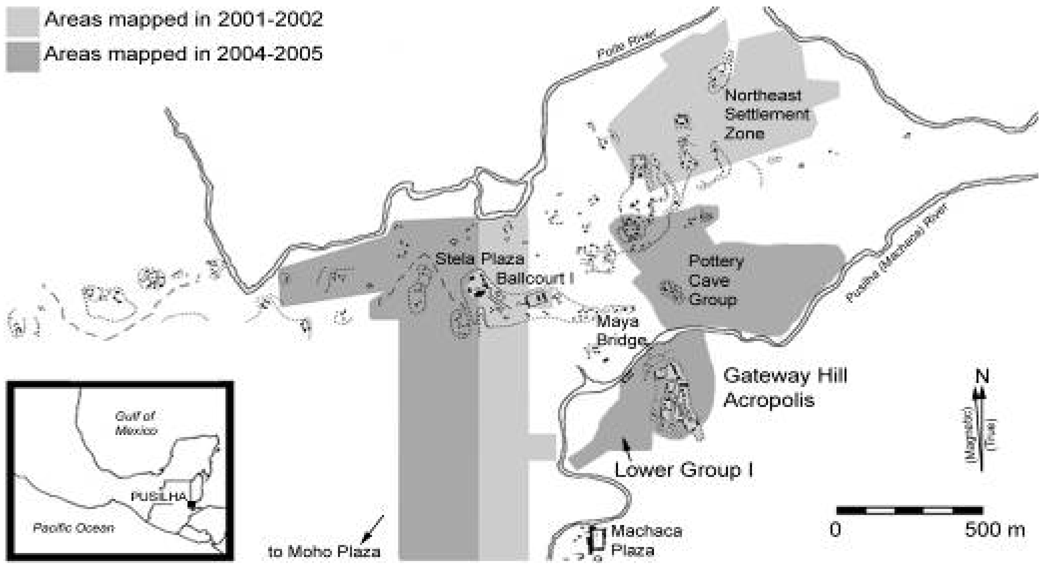

Figure 1. The Maya site of Pusilha, Belize (*based on Leventhal 1990: Figure 8.1*). Gray areas were mapped in 2001-2002 and 2004-2005; newly discovered structures in these regions are not included in the map.

his regional study focusing on Lubaantun, Norman Hammond (1975) visited Pusilha and conducted additional explorations of Pottery Cave. In 1979 and 1980, Richard Leventhal (1990, 1992) produced a pace-and-compass map of portions of the site and conducted test-pitting excavations in several groups. More recently, a team led by Gary Rex Walters investigated caves and conducted general reconnaissance.

Our interest in Pusilha grew out of research Cassandra Bill and Geoffrey Braswell conducted at Copan. Since its rediscovery, several investigators have posited a connection of some sort between Pusilha and the Copan and Quiriguá regions. Evidence for this connection consists of a shared tradition of carved-in-the-round zoomorphic altars, close similarities between the Pusilha and Quiriguá emblem glyphs (the main sign of the latter differs principally in its horizontal orientation), and apparent references at Pusilha to Ruler 11 of Copan and an enigmatic figure nicknamed Foliated (or Leaf or Decorated) **Ajaw**, once thought to have been a pre-dynastic ruler of the Honduran city. Joyce Marcus (2003:95) suggested that, like Quiriguá, Pusilha may have began its political history as a small regional province, later annexed by the expanding Copan state, and finally, may have reasserted its independence during the period of Copan's fragmentation. Alternatively, following Martin and Grube (2000), we also considered the possibility that Pusilha and Copan were linked not only with each other, but also allied to Tikal. We hoped to evaluate both of these hypotheses from an economic perspective, as well as through a careful analysis of the large hieroglyphic corpus of Pusilha. As often is the case in archaeological research, we have now largely abandoned both our preconceptions. Instead, we argue that Pusilha was not closely allied in a political or economic sense with Copan or Tikal.

Ceramic Analysis

One of the principal lines of argument against close economic ties between Pusilha and Copan is drawn from the analysis of ceramics excavated during the past three field seasons. Cassandra Bill, Co-Director of PUSAP, has studied these materials and has tentatively defined a four-phase sequence of occupation dating to the

beginning of the Late Classic, the later Late Classic, the Terminal Classic, and the Postclassic periods. Although materials collected by Walters from caves in the area of Pusilha demonstrate that the region was visited during the Early Classic period, Cassandra Bill has identified only two possible Early Classic sherds in our excavated collections, both recovered from the same mixed fill context. Nevertheless, Stela P begins with the initial series date of **9.7.0.0.0** and contains a historical retrospective date of **9.6.17.8.18** (A.D. 570), implying that the kingdom was founded shortly before the beginning of the Late Classic period.

The Late Classic assemblage of Pusilha reveals close ceramic ties with the Peten, particularly the southern and southwestern lowlands, but only slight evidence of interaction with western Honduras (Bill and Braswell 2005; Braswell et al. 2004b). These evanescent ties are manifested principally in polychrome pottery that shares a few motifs with contemporary painted ceramics from Copan, and strangely, from eastern El Salvador. Although the data are not robust, our excavations in and around Pottery Cave suggest that these weak ties with the southeastern periphery were most evident during the early facet of the Late Classic period. There is no evidence of interaction with the Valley of Belize during either the early or late facet of the Late Classic period. Instead, utilitarian forms, modes, and decorative elements are most closely related to pottery found at southern Peten cities, including Cancuén and sites in the Pasión and Petexbatún regions. Hieroglyphic inscriptions also support close ties with these regions (see Braswell et al. 2004a, 2004b). To speculate quite a bit, it may be that the Late Classic population of Pusilha originally came from the southwestern Peten. Alternatively, inhabitants of Pusilha may have participated in an East-West riverine trade network linking the Caribbean to the Usumacínta watershed. In short, Late Classic Pusilha was a Tepeu-sphere site sharing much with the southern Peten, some design elements with the southeastern periphery, and very little with the Belize Valley.

We have recovered a surprising amount of Terminal Classic pottery from surface and floor contexts at Pusilha. An important new arrival during the end of the 8th and early 9th centuries was Belize Red from the Belize Valley (Figure 2), demonstrating exchange relations with new regions during this time period. Fine Orange ware also was imported or locally manufactured and carved drinking vessels of the “Brandy Snifter” form also suggest ties with the northwestern Maya lowlands. Finally, the crude and unstandardized Postclassic ceramic assemblage represents a sharp technological break from Classic traditions, in a manner similar to that described for the New Town complex of the Belize Valley (Gifford 1976), the Ejar complex of Copan (Manahan 2000), and similar complexes from Cancuén (Bill et al. 2003) and the Petexbatún region (Foias 1996).

Epigraphic Analysis

Prager’s (2002) analysis of the Pusilha hieroglyphic corpus supports Cassandra Bill’s ceramic conclusions. He has identified 39 named individuals, including eight rulers linked to the Pusilha emblem glyph and two additional probable Terminal Classic rulers. Although it once seemed likely that Ruler B of Pusilha, whose name is read as **k’ak’ u ti’ chan**, was

the same individual as Ruler 11 of Copan, we

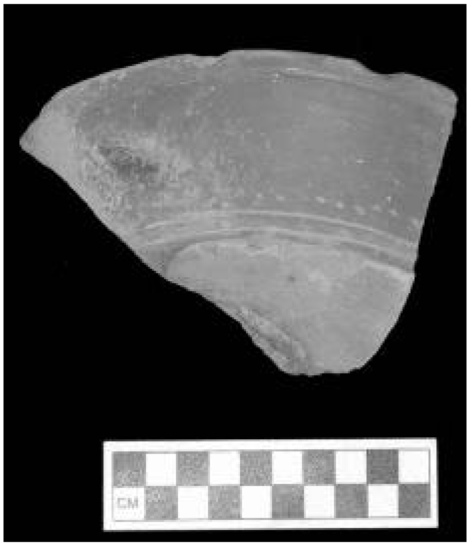

Figure 2. Sherd from complete Belize Red plate found in Burial 3/2. The burial and the plate date to the Terminal Classic period

now know that they were partially contemporary individuals with different parents who happened to share the same name. Close examinations of Stela U (Figure 3), conducted this field season, suggest that a second ruler of Pusilha who lived near the end of the 8th century also shared this name. It now seems certain that Foliated **Ajaw**, a figure mentioned in many retrospective texts found at Pusilha, Copan, Tikal, and elsewhere, was not a pre-dynastic ruler of Copan but instead was a legendary figure linked somehow to the origin of kingship. Thus, neither of the two possible political connections with Copan once considered now seems likely. Although some personal names and a toponym suggest interaction with the Pasión and Petexbatún zones, there is no clear mention in the corpus of Copan, Quiriguá, Tikal, Calakmul, or any other well-known site in the Maya lowlands. Moreover, there are no known references to Pusilha in the hieroglyphic texts of these or any other site. It appears, therefore, that Pusilha was not intimately involved with the political machinations of these important polities. Engaging again in pure conjecture, it may be that Pusilha was founded at the beginning of the Late Classic period by factions who – like the modern Q'eqchi' – sought southern Belize as a haven against political troubles in the Peten.

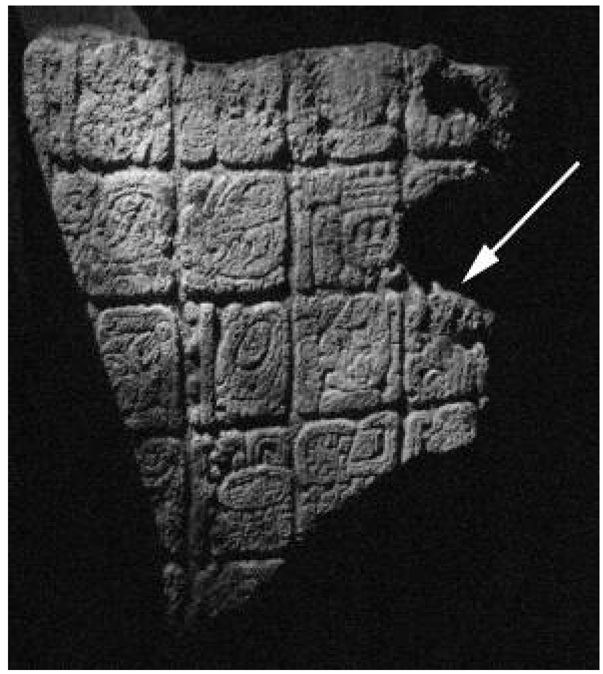

Figure 3. Pusilha Stela U. Arrow points to the name **k'ak' u ti' chan**, probably a Late to Terminal Classic ruler who carried the same name as the much earlier Ruler B of Pusilha.

Two rulers of Pusilha, Ruler A and Ruler G, employed the important title **och'k'in kalo'mte'**, roughly glossed as "western lord" (we have no translation of the verbal root **kalo'm**). At Tikal and elsewhere, this title is clearly associated with the founding of new male lines of royal descent. The use of the **och'k'in kalo'mte'** title by Ruler A (apparently the first ***ajaw*** of Pusilha) and by Ruler G (who inherited through his mother) is consistent with this

meaning. At Tikal, the title is also viewed as indicating a "high king" of extraordinary

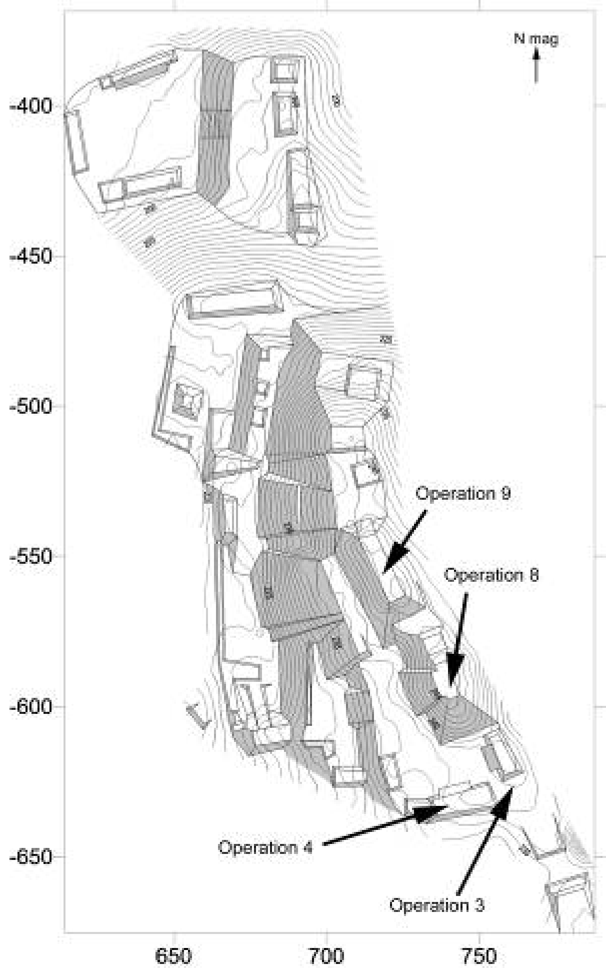

Figure 4. A partial map of the Gateway Hill Acropolis, completed in 2001. Location of the Operation 3, 4, 8 and 9 structures are shown; two additional terraces and many structures to the west and north, along with Ballcourt 2 and the Maya Bridge, were mapped in 2005 but have not yet been incorporated into the base map.

power, and is ambiguously associated with Teotihuacán. In addition to two uses of this possibly foreign-inspired title by rulers of Pusilha, Stela C, of which only the front is legible, displays a ruler holding a serpent bar with depictions of the Mexican storm/Venus god. We raise the issue of possible claims of a Teotihuacán affiliation because it is of relevance to the identity of the individual in the tomb excavated during the 2005 field season.

Excavations

A total of seven structures were excavated during the 2004 and 2005 field seasons. Four of these are located at the southern summit of Gateway Hill (Figure 4), the other three at its base. The Gateway Hill Acropolis is one of the most imposing architectural complexes in the Maya world. The hill itself is a natural feature that was substantially modified to form a massive acropolis consisting of eight distinct terraces that rise to a height of 79m; nearly the

combined height of the Caana of Caracol and the Castillo of Xunantunich. The main entrance to the acropolis is found south of the ancient bridge, where two parallel stair/terrace systems rise 30 m to the first terrace. Each of the terraces support a

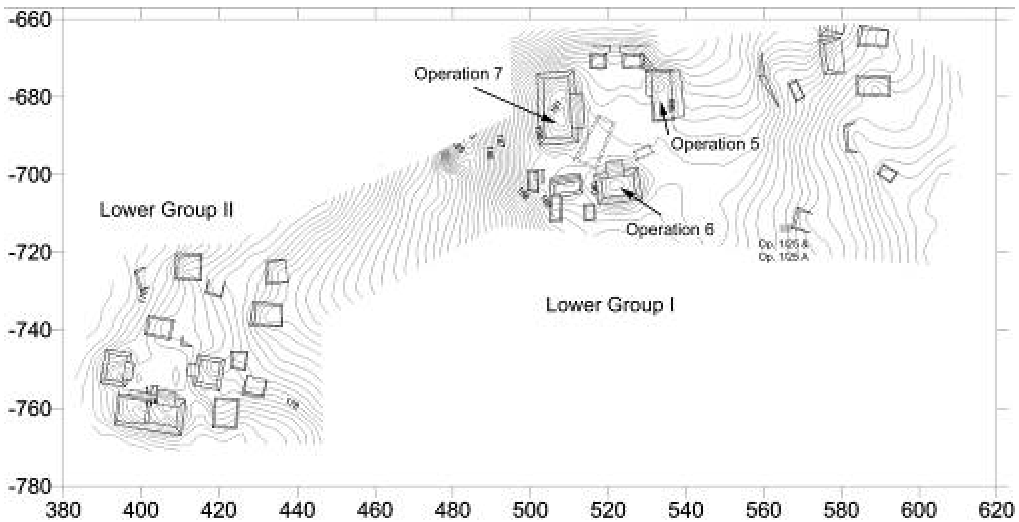

Figure 5. Lower Groups I and II showing the location of the Operation 5, 6, and 7 structures

number of range structures, and three pyramidal-like platforms are found at the top. A ramp or sacbe leads down from the first terrace to Ballcourt 2, one of four known at the site. An ancient toponym found in the Pusilha inscriptions is read as "Step Mountain." This almost certainly refers to the acropolis itself.

2004 Excavations in Lower Group I: The Operation 5, 6, and 7 Structures

In 2004, excavations were conducted in three structures in what we call Lower Group I (Figure 5), 100m east of the southern end of the acropolis. Two platforms, the Op. 5 and Op. 6 structures, were substantially excavated, but the Op. 7 structure – encountered in a heavily looted state – was subjected only to test pitting. No architectural features, traces of a substructure, or burials or caches were discovered in the Op. 7 structure. It is interesting, however, that the only two possible Early Classic sherds that we discovered come from this test pit. It also is important to note that little evidence of Terminal Classic activity was discovered anywhere in the group, indicating that Lower Group I was built, occupied, and abandoned during the Late Classic Period.

The Op. 5 structure is a low, poorly preserved, and simply built range structure along the western edge of Lower Group I (Figure 6). Excavations revealed that the platform was added on to the edge of the plaza platform. Two burials were encountered. Burial 5/1 consists of the partial remains of a child under 10- and probably closer to five-years old. The burial was cut into the front (western) edge of the Op. 5 structure platform, which was repaired using fill rather than facing stones. A simple shell necklace was the only grave good associated with the child. The burial is fascinating however; because the child's deciduous incisors were inlayed with jade. Such inlays are extremely rare in milk teeth. Burial 5/2 consists of very partial remains

found eroding out of the mound surface. No grave goods were associated with this individual.

The richest burial – Burial 6/1 – encountered in the group was found in the Op. 6 structure, a low pyramidal mound at the southern end of the group (Figure 7). The interment is a secondary burial; human remains were fragmentary and jumbled, and the grave goods appeared to have been scooped out of their primary contexts and redeposited in broken and fragmentary condition. These goods consist of four vessels (one of which probably dates to the re-interment), a pyrite mirror with a fragmentary slate back, hematite inlays, jade beads, a Spondylus shell, and beautiful propeller-shaped ear ornaments. Also found were a white limestone baton and a paddle-shaped slate object. In the Belize Valley, these are referred to as slate "wrenches" and are presumed to be symbols of office. It is

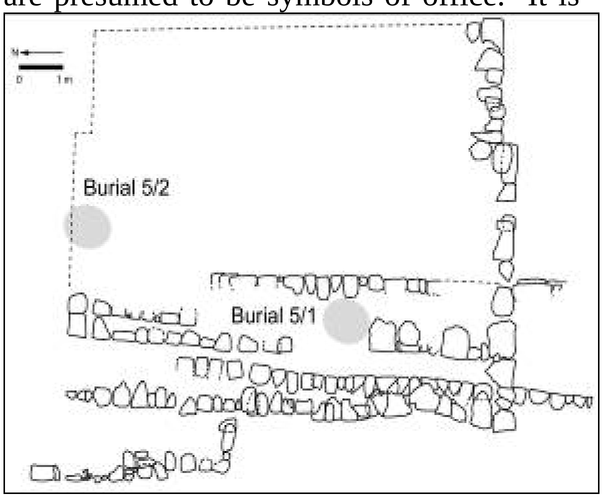

Figure 6. Plan of the Operation 5 Structure, Lower Group I.

It is interesting to note that an unprovenienced carved-bone artifact that depicts the Pusilha emblem glyph also is of this shape. Burial 6/2, found in a small crypt in the structural fill south of Burial 6/1, contained the fragmentary flexed remains of a second individual. No grave goods were associated with Burial 6/2.

2004 Excavations in the Acropolis: The Operation 3 and 4 Structures

In addition to the excavations in Lower Group I, in 2004 we also excavated two range structures at the summit of the acropolis. The first, called the Op. 3 Structure, is a west-facing range structure just south of the highest free-standing structure at Pusilha (Figure 9). The Op. 3 structure was built in one construction phase, and consists of a 2-m high platform with a central stair block flanked by two stair-side outsets. Three burials – probably relating to a single interment – were found at the summit of the structure. A low wall, built floating on structural fill within the platform itself, passed in front of all three burials, as did a temporary earthen floor, upon which – we surmise – people attended the burial rites of all three principal individuals.

Like nearly all burials at Pusilha, the central figure (Burial 3/1) was placed with his head in the north. Although not found in any well-defined crypt, his head was covered by a broken capstone. Accompanying grave goods include a plate found over his pelvis, the fragmentary remains of another vessel, and two companion heads. One of these companion heads (along with additional bones from the proximal torso) was placed at the pelvis, and the other was found near the head of the primary figure. The second companion head was very fragmentary, but five teeth contained hematite inlays or had been drilled for such inlays.

Burials 3/1A and 3/1B were placed north and south of the central figure. In the

case of the northernmost burial, no crypt or chamber had been prepared for the individual. Instead, a single, large capstone was placed at waist and leg level. The position of the body was flexed with the individual lying on the left side, facing east. The grave goods associated with Burial 3/1A include two vessels in proximity to the lower extremities and mid-section of this individual. Like other paired funerary vessels at Pusilha, one was a plate and the other a drinking vessel, in this case a vase.

The southernmost burial, Burial 3/1B, was found south of the central figure in a simple crypt. The burial was extended, and the head of the individual was covered by a broken plate. A large cylinder vase with traces of polychrome paint also was recovered. Other grave goods encountered in Burial 3/1B include a thin fragment of a greenstone ornament, a small triangular fragment of greenstone that is polished on one side, and a single, complete forest-green bead. Additionally, 530 jute shells were recovered from this lot, as well as a bivalve fragment.

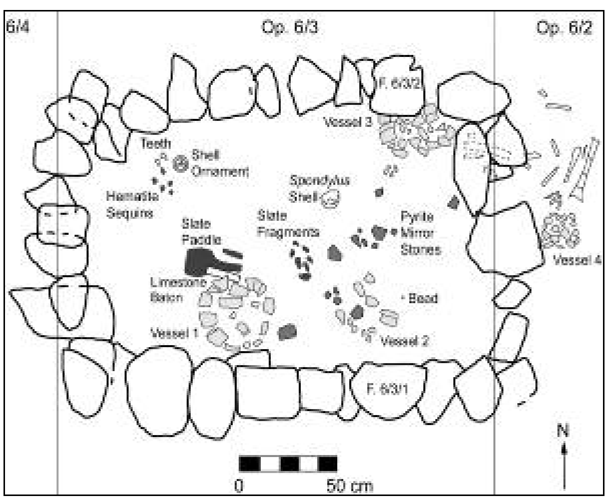

Figure 7. Burial 6/1 of the Operation 6 Structure, Lower Group I.

All the ceramics recovered from Burials 3/1, 3/1A, and 3/1B date to the Late Classic period, specifically Tepeu II times. A fourth burial, Burial 3/2 was found at the foot of the stairs of the Op. 3 Structure. The principal body was interred within a crypt created by limestone uprights surmounted by capstones. The crypt itself was intrusive into the level of the plaza floor. That is, the burial postdates the construction of the Op. 3 Structure. A well-preserved adult individual was found in an extended, supine position. The upper canines and lateral incisors were all drilled for inlays, and central jade inlays were found in the upper right canine and upper left lateral incisor. Near the head, we recovered two almost complete vessels. One is a “brandy-snifter”-shaped cup carved outside with what appears to be pseudo-writing. The other is a fine red-ware plate or dish with small molded ball-shaped foot supports and a filleted basal flange. Both of these forms date to the Terminal Classic. A large, complete Belize Red plate (Figure 2) was placed at the feet of the primary individual, also providing evidence that Burial 3/2 dates to the Terminal Classic period. In close proximity to this plate were the partial remains of a second individual. The second individual again represents a “companion” and consists of several skull fragments, teeth, a few long bones, and hand bones. These partial remains were crammed in a flexed position at the feet of the primary individual. It is possible that the primary individual in Burial 3/2 is a Terminal Classic descendent of the Late Classic principal figure interred in Burial 3/1. The Op. 4 structure was badly looted just days before we began our excavations in 2004. For this reason, investigation was limited to exposing final-stage architecture and exploring a huge looter’s trench that destroyed the center and western half the

structure. Unlike the other platforms described so far, the Op. 4 structure contains a substructure built on a lower plaza level. When the plaza floor was raised, the platform was extended slightly to the north and possibly east. We recovered several arm bones and an intact cranium resting immediately on top of the terminal plaza floor and beneath a capstone. Although the body was clearly left on the surface, we have designated it as Burial 4/1. The fragmentary nature of the remains suggests that animals may have dragged the torso and lower extremities away for consumption.

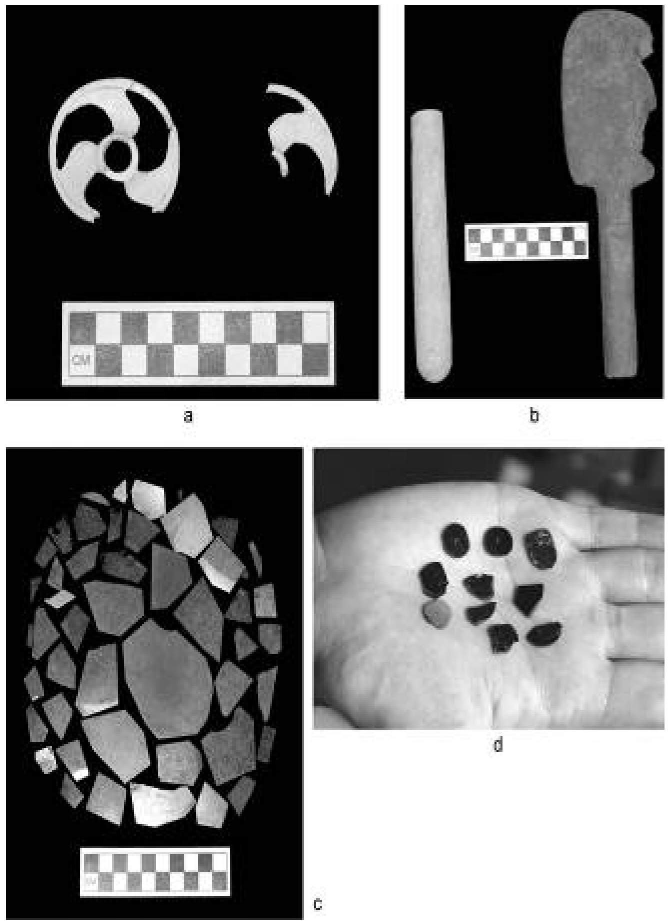

Figure 8. Artifacts recovered from Burial 6/1 (referred to as Burial 7 in Bill and Braswell [2005]), an elaborate crypt found in a structure 100 m west of the Gateway Hill Acropolis: (a) shell ornaments; (b) slate "wrench" and limestone baton; (c) pyrite mirror fragments; (d) hematite ornaments.

We have exported three teeth from each of the primary individuals and companions in the Op. 3 burials, as well as the burials excavated in the Op. 4, Op. 5, and Op. 6 structures. We plan to conduct isotopic analyses to determine the place of origin of all 12 individuals, and also hope that DNA studies will provide evidence of biological relationship. In particular, we are interested in determining if the companions were revered ancestors of the principal

individuals or if they were unrelated foreign captives.

2005 Excavations: The Operation 8 and 9 Structures

In 2005, our excavations were limited to two large platforms: the Op. 8 and Op. 9 structures (Figure 4). The Op. 9 structure is the least-looted of three pyramidal-like structures at the summit of the Acropolis. Oddly, the Op. 9 structure contains no stair on its western side. Instead, access was provided by small stairs on the south (facing the Op. 8 structure) and the north (facing two very badly looted platforms at the northern end of the acropolis). Excavations quickly revealed that the core of the Op. 9 structure is largely bedrock, which forms the natural top of

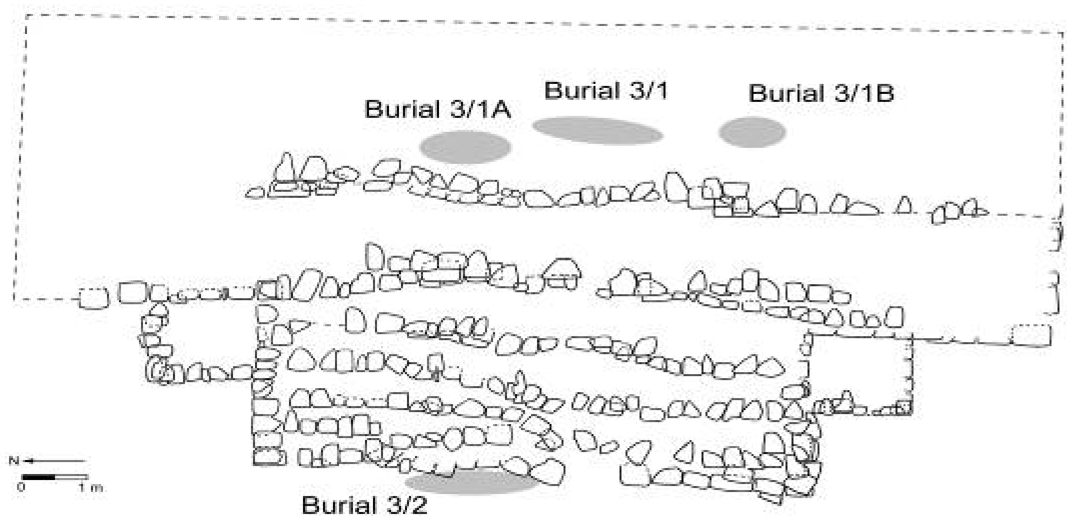

Figure 9. Plan of the Operation 3 Structure, Gateway Hill Acropolis

Gateway Hill. Facing stones were added to the west side to give the appearance of a completely artificial structure. The northern end of the platform was destroyed by looters but seems to consist of a small platform. The southern end is comprised of a single, small platform built above bedrock that was gradually expanded to the north in at least three stages. The center of the Op. 9 structure consists of natural bedrock very close to the terminal surface. In its final stage, we posit that a single platform spanned the entire Op. 9 structure, covering all bedrock. No postholes were found and very few artifacts were recovered, except in an area immediately north of a looter's pit that exposed a platform wall and bedrock. Here, a large quantity of obsidian, two polished greenstone fragments, and a tooth pendant were found with some faunal remains. No human bone was recovered, suggesting that the disturbed area was not a burial. Rather than being a pyramidal platform, it seems likely that the Op. 9 structure was a largely natural feature modified to serve as an elevated access way between the Op. 8 structure and the northern end of the acropolis.

Our most intensive excavations were conducted in the Op. 8 structure, the largest free-standing platform known at Pusilha. Unlike the Op. 9 structure, it contains a large stair on its western, or front, side. The fill of the Op. 8 structure is extremely unstable and precluded excavation below a depth of about three meters. Therefore,

although no evidence of a substructure was found, we cannot completely rule out the possibility that one lies deeply buried within the platform. Four later, relatively minor modifications to the Op. 8 structure were noted. First, a large stair-side outset, resembling a buttress wall, was built against the southwestern body of the platform. Second, a smaller outset was added to the north side of the stair block, probably to stabilize it. Third, the northern end was expanded to join a low terrace abutting the Op. 9 structure. Finally, a low terrace or wall was built along the southeastern face of the platform, joining it to the Op. 3 structure and forming a room or small structure on the plaza level. Artifacts recovered from this final addition suggest that it dates to the Terminal Classic period.

Figure 10. Carved jade pendants from the Burial 8/4 tomb. The lower two images are of the obverse and reverse sides of the same pendant; the other two pendants (upper images) are not carved on their reverse.

The partial remains of two individuals were found shoved up against the south side of the Op. 8 structure and on the surface of the plaza. It is possible that one fragmentary set of remains, called Burial 8/2, represents the same individual identified as Burial 4/1. In sum, at the end of the occupation of the acropolis during the Terminal Classic period, at least two and possibly three individuals were left dead on the surface of the plaza.

A double interment, called Burial 8/3, was found in front of the stairs on the principal axis of the Op. 8 structure. This crypt burial contained an extended figure with two capstones over his head, a fragmentary red-ware vessel, and part of carved vessel in the "brandy-snifter" form. A second individual was found in a flexed position at the head of the extended figure. The ceramics tentatively suggest a Terminal Classic date.

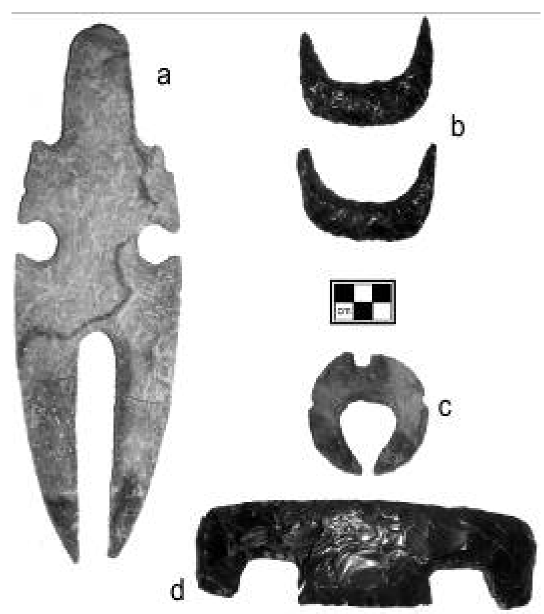

Figure 11. Eccentrics found associated with the

Burial 8/4 tomb: (a) anthropomorphic chert eccentric; (b) pair of small obsidian eccentrics; (c) small chert eccentric; (d) large obsidian eccentric

The most important burial thus far excavated at Pusilha was found at the top of the Op. 8 structure. Here, a large tomb, called Burial 8/4, was discovered just below the seven looter's pits that have destroyed most of the upper surface of the platform. The base of the tomb is approximately 2.5 m below this greatly disturbed surface. A single individual, consisting of very fragmentary remains, was found in what probably was originally an extended position. The fragmentary and disturbed remains suggest both antiquity and later re-entrance of the tomb. A small antechamber originally provided access to the tomb from the southeast, but broken capstones and large-fill stones found in the tomb itself imply later re-entry from the top of the platform. Hundreds of obsidian fragments were found floating within the re-filled tomb, as well as on its floor. These may have been deposited above the capstones before the tomb was re-entered, and later were re-incorporated into fill.

Grave goods include approximately a dozen vessels, all of which were found crushed by the stones used to fill the tomb. Most were found lined up on the east and north sides of the tomb. Many are polychrome or carved vessels. One basin, west of the head and at the northwest corner of the tomb, contained 24 complete jadeite beads, a crushed bead, two carved jade ornaments (Figure 10, upper), a tubular bead, two appliqués resembling large round eyes, and many mosaic pieces made of jade. In total, 81 fragmentary and whole jade artifacts were found in the basin. The beads belong to a necklace and the two carved figures and at least some of the mosaic pieces seem to be part of the **saq hunal** headdress of a Maya ruler. Additional grave goods include two small obsidian eccentrics and a chert eccentric placed near the head, a large obsidian eccentric encountered near the center of the tomb (Figure 11b-c,d), a very large Spondylus shell serving as capstone for the east-facing cranium, a fragment of pyrite, and a third carved jadeite figure (Figure 10, lower), along with many more greenstone beads and a pearl bead, were found on the east side of the tomb. This double-sided pendant probably was the third and central element of the **saq hunal** headdress. A very small fragment of this last pendant was also found in the basin with the other two, suggesting that the third example was moved when the tomb was re-entered. A second Spondylus shell was found over the mouth and chin, and additional small greenstone and painted ceramic beads formed a necklace worn by the deceased. Finally, a large anthropomorphic eccentric made of chert was found above and north of the tomb (Figure 11a).

The placement of the tomb, its later re-entry and backfilling, and especially the rich grave goods are consistent with an interment of a member of the royal family. The **saq hunal** headdress implies that the individual within the tomb was, in fact, an **ajaw.**

Although no hieroglyphic texts were found in the tomb, there are several intriguing hints that the **ajaw** in Burial 8/4 claimed some sort of affiliation with Teotihuacán. The three jade pendants from the tomb are carved in a peculiar style. One has snarled lips reminiscent of Tikal Stela 4 and of much earlier Olmec iconography. The four figures carved on the three pendants are all shown from a frontal position, perhaps borrowed from Teotihuacán stylistic conventions. One of

the figures on the double-sided pendant has a face rendered in a particularly strong Teotihuacán style (Figure 10, lower left), and also has a Teotihuacán headdress. Nevertheless, it is probable that Maya artisans produced all the pendants. Despite the use of foreign conventions and limited Teotihuacán iconographic content, the overall effect of the three pieces is Maya in character.

The anthromorphic chert eccentric (Figure 11a) is somewhat reminiscent of much smaller obsidian eccentrics that are well-known from Teotihuacan itself, and that also have been found at Altun Ha. At Teotihuacan, such anthropomorphic eccentrics appear to represent symbolic, rather than actual, human sacrifice.

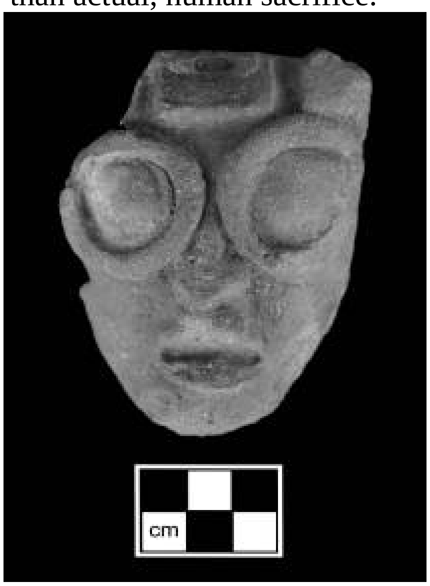

Figure 12. Ceramic model of a face wearing central Mexican-style goggles. Provenience is Op. 8/14/4.

The large obsidian eccentric is made of a very dark material (Figure 11d), perhaps imported from central Mexico. But because of the thickness of the piece, it can be definitively sourced only by geochemical means. A final clue that the inhabitant of Burial 8/4 claimed some sort of connection with Teotihuacán can be seen in a modeled clay fragment found elsewhere in the Op. 8 excavations (Figure 12). This figure clearly wears the goggles of the central Mexican storm, Venus, and war god. It does not seem coincidental that the only representation of this sort from Pusilha comes from the same structure as the Burial 8/4 tomb. Hieroglyphic texts, it should be recalled, describe two rulers as using the **och'k'in kalo'mte'** title, which also may have some association with Teotihuacán. In sum, although the evidence is far from definitive, we tentatively suggest that the individual in the Burial 8/4 tomb was either: (1) the dynastic founder himself, **k'awil chan k'inich**, or (2) Ruler G. As ceramic studies and other analyses continue, we hope to conclusively identify the individual. Other royal tombs have been found at sites such as Altun Ha and Xunantunich, but this may be the first time that the tomb and mortal remains of an ancient Maya ruler whose exploits are described in hieroglyphic texts have been discovered in Belize.

Conclusions

Four field seasons of archaeological and epigraphic investigations at Pusilha have begun to answer our research questions, although the answers are not what we originally expected. Some ceramic data suggest an early Late Classic connection with Copan and other sites in the southeastern Mesoamerican periphery, but much stronger ties with the southern and southwestern Peten are evinced by both ceramic and epigraphic analysis. Our best guess is that most of the early settlers of Pusilha came from the west rather than from the southeast. Moreover, the site continued to maintain economic ties with the southern and southwestern Peten throughout most of

its history, apparently eschewing trade with the Valley of Belize until the Terminal Classic. "Pull" factors that may have encouraged the dynastic founder **k'awil chan k'inich** to come to Pusilha include available and under-inhabited land of high fertility, as well as the desire to control an important trade route between the Caribbean Sea and Usumacínta watershed. The importance of the foothills of the Maya mountains as a place where caves drew religious pilgrims also may have been a factor. We further speculate that "push" factors for migration may have included political instability and warfare in the southwestern Peten. Although we have only negative evidence, it seems as though the rulers of Pusilha deliberately kept themselves distant from the political struggles between both Tikal and Calakmul and Copan and Quiriguá. Many analogous "push" and "pull" factors exist today, and have contributed greatly to the influx of Q'eqchi' Maya in Toledo District.

With the discovery of the tomb of one of the rulers of Pusilha, we now have a rich variety of ceramic and lithic artifacts that in future years may provide further data relevant to the question of the origin of Pusilha and the migration of what became the largest Classic-period community of southern Belize.

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20 TERMINAL CLASSIC CIRCULAR SHRINES AND CERAMIC MATERIAL IN THE SIBUN VALLEY, BELIZE: EVIDENCE OF NORTHERN YUCATEC INFLUENCE IN THE EASTERN MAYA LOWLANDS

Eleanor Harrison-Buck and Patricia A. McAnany

During the Terminal Classic period (ca. AD 800-1050), political powers collapsed in the "Maya heartland" of Peten, Guatemala, and important centers, such as Chichen Itza, extended their power base outside of northern Yucatan. An expanded trade network along the Caribbean coastline—possibly administered by Chichen Itza—provided multiple points of entry to coastal and riverine settlements in Belize. In this way, northern influence appears to have spread to the Sibun Valley in the mid-section of Belize—over 350 km south of Chichen Itza. At three sites in the Sibun valley - Pechtun Ha, Oshon, and Obispo— circular-shrine structures were constructed. To evaluate north-south interaction and the role of Chichen Itza in the Belize Zone we examine foreign influence in both architecture and ceramic material.

Introduction

Archaeological remains from the central Belize area in the southern Maya Lowlands generally reflect a local Peten-affiliated tradition in the ceramic styles (Rice and Forsyth 2004) and various types of ritual behavior, such as stela and altar dedication. However, during the Terminal Classic period (AD 800-1050) a rich assemblage of foreign traits, namely circular architecture, appears to overlie this local tradition at sites in the eastern Maya Lowlands, particularly at sites situated in close proximity to the Caribbean coast or linked to the coast via river systems (Figure 1). Kowalski and others (1996; see also Ringle et al. 1998) argue that the circular architectural complex stems from Chichen Itza, the dominant center in northeastern Yucatan during the Terminal Classic, and when found elsewhere in the Lowlands are indicative of a strong interaction with this northern polity. The round Caracol building at Chichen Itza (Ruppert 1935) served as the template for numerous other circular shrines found at sites throughout the Maya Lowlands, including Uxmal (Kowalski et al. 1996), Cozumel (Freidel and Sabloff 1984), Becan (Harrison 1979), and a number of sites in Quintana Roo (Pollock 1936), as well as Nohmul (D. Chase and A. Chase 1982; Hammond 1985), Caye Coco (Rosenswig and Masson 2001) and San Juan (Guderjan 1995; Guderjan and Garber 1995) in northern Belize. Recent excavations at three sites in the Sibun Valley - Pechtun Ha, Oshon, and Obispo (Figure 2) - exposed three additional examples of Chichen Itza style of circular architecture; these represent the southernmost examples found in the eastern Lowlands.

In this chapter, we discuss the architectural features of the circular structures in the Sibun Valley and elsewhere in the Maya Lowlands with an eye to refining the nature of activities that took place within these highly patterned buildings. Additionally, we document the Terminal Classic ceramic assemblage associated with circular shrines in the Sibun Valley, which includes traditional ceramic types associated with the Tepeu/Spanish Lookout Sphere as well as a large group of ceramics in the assemblage that depart from this tradition and exhibit strong northern attributes in both form and surface decoration. Our analysis suggests that the introduction of northern-style architecture and the distinct ceramic assemblage with

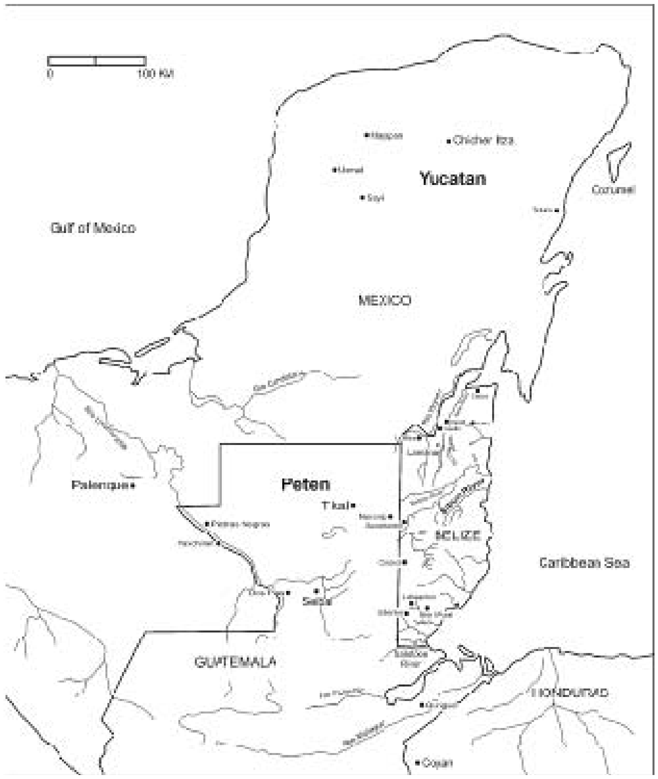

Figure 1. Map of the Maya area, highlighting the location of the Sibun River valley. Note the location of Petén and northern Yucatán.

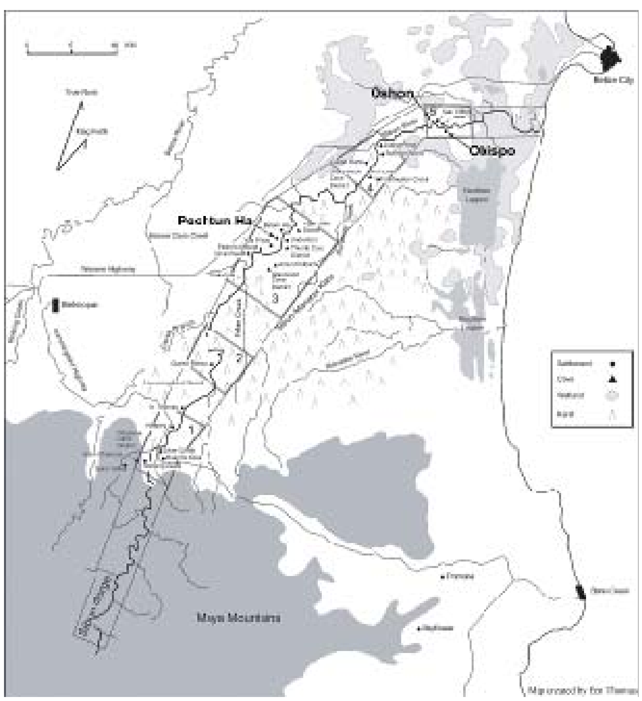

Figure 2. Map of the Sibun Valley and ancient Maya settlements. Note the locations of Pechtun Ha, Oshon, and Obispo—the three sites that are the focus of discussion (map prepared by B. Thomas).

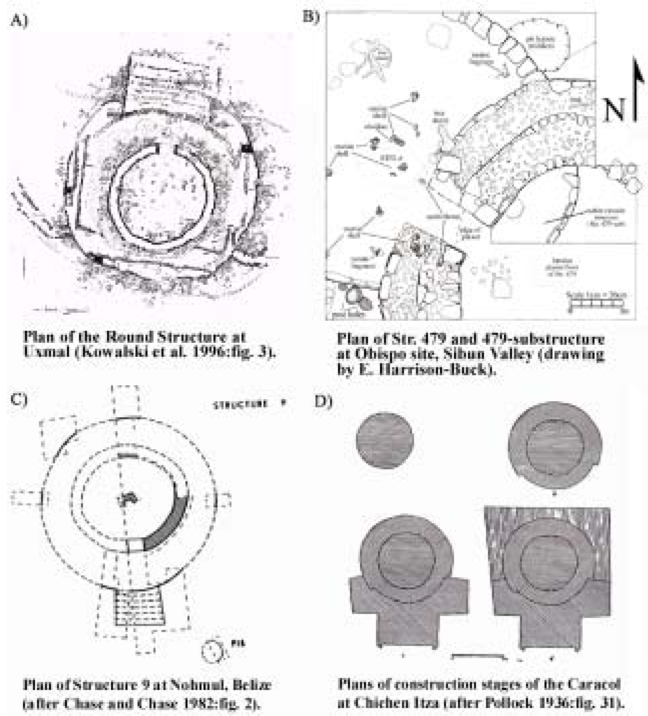

Figure 3. Four examples of round structures from the Maya Lowlands. A) Plan of round structure at Uxmal (after Kowalski et al. 1996: Figure 3). B) Plan of Substructure 479 and Structure 479, the round structures at Obispo in the Sibun Valley. C) Plan of Structure 9, the round structure at Nohmul (after D. Chase and A. Chase 1982: Figure 2). D) Plans of the Caracol building at Chichen Itza (after Pollock 1936: Figure 31).

northern Yucatecan forms and stylistic elements are tied to a coastal interaction sphere that developed along the Inner Channel of the Caribbean Sea at the end of the Classic period, perhaps as early as AD 750. This extensive coastal trade network appears to have been administered by Chichen Itza (Sabloff 1977; Sabloff and Rathje 1975).

The evidence from the Sibun Valley indicates strong interaction with Northern Yucatan during the Terminal Classic period, but the material remains also show the retention of a pre-existing local tradition. Notably, high densities of marine specimens and cave formations were found associated with circular architecture in the Sibun Valley. The integration of material symbols derived from the local landscape in the context of northern-style architecture suggests to us not a replacement, but an amalgamation of local and foreign cosmologies likely linked to increased north-south trade and interaction that developed along the Caribbean coastline. The distribution of cave and marine specimens in the context of round structures is examined and interpretations regarding the ideological significance of circular shrines are also discussed.

The Sibun Valley and the Terminal Classic Period

Positioned in the eastern Maya Lowlands (or the Belize Zone), the Sibun Valley is strategically located relative to two core areas of the Maya region (see Figure 1). The Sibun Valley is linked to the Peten area - and its many powerful Classic Maya centers, such as Tikal and Naranjo—via the Belize Valley, which is the proximate drainage immediately to the north. Additionally, the Sibun River valley flows into the Inner Channel of the Caribbean Sea, providing access via maritime transport to northern Yucatec capitals such as Chichen

Itza. These geographic links would have enabled the Sibun to potentially interact with both of these core areas.

The Terminal Classic period—the transition from the Classic to Postclassic (AD 800-1050)—marks an important period of political, economic, and social transformation throughout Mesoamerica (Diehl and Berlo 1989). During this time, Maya centers in the Peten core area were declining, and northern polities, such as Chichen Itza, were on the rise. During this transition, we see the introduction of circular architecture and associated ceramic types that depart from the Peten-affiliated (Tepeu/Spanish Lookout) tradition at Pechtun Ha, Oshon, and Obispo in the middle and lower reaches of the valley (see Figure 2). The evidence suggests that the Sibun Maya living in these parts of the river valley shifted their political and economic focus away from the Peten and developed some degree of interaction with the coast and the rising powers to the north, namely Chichen Itza. Meanwhile, architecture and ceramics at other sites in the Sibun farther inland, namely Hershey—the largest site in the valley—reflects strong affiliations with the Peten sphere and displays none of the northern-style ceramics and architectural traits (Harrison-Buck et al. 2006; Thomas 2005). By the end of the Late Classic period (ca. AD 800), Hershey and other sites in the western part of the Sibun Valley appear to collapse, while sites in the middle and lower reaches (Pechtun Ha, Oshon, and Obispo) continue to thrive in the Terminal Classic and are sporadically occupied as late as the Middle Postclassic (until ca. AD 1250/1300).

Terminal Classic Circular Architecture in the Sibun Valley and Throughout the Lowlands

The Terminal Classic circular structures found at Pechtun Ha and Oshon contained three separate building episodes, while the Obispo circular shrine revealed five phases of construction with two discrete circular structures, one overlying the other (Figure 3b). The multi-phased construction suggests that these structures did not represent a single, short-lived episode in the history of the Sibun Valley, but a long-term cultural establishment. Furthermore, these structures appear well-integrated into the original site plans of the main elite plaza group at all three sites in the Sibun Valley. The ceramic material (discussed further below) associated with these multi-phased buildings suggest that the circular structures in the Sibun Valley were occupied for several centuries, between AD 750-1050.

Three charcoal samples from the circular structure at Obispo were subjected to radiocarbon dating and the results confirm the span of occupation and the Terminal Classic date assigned to these buildings. The charcoal samples provide date ranges for three of the five construction phases, beginning with the earlier round structure (Substructure 479) at Obispo that was identified at the base of excavations. This initial phase contained two construction episodes. Sample 1, with a two-sigma calibrated date range of AD 758-891, was retrieved from a fill layer associated with the second phase of the earlier circular substructure. The substructure was partially covered by a later circular building (Structure 479), containing three discrete architectural phases. Sample 2, with a calibrated date range of A.D. 758-887, were found embedded in the floor of an interior room associated with the middle architectural phase. The third sample, with a calibrated date range of A.D. 883-1018, was collected from a midden deposit associated with the final occupation of the circular structure at Obispo.

Architecturally, the three circular buildings that were partially uncovered

during excavations in 1999, 2001, and 2003 appear to be very similar to one another (Harrison and Acone 2002; Harrison 2003, Harrison-Buck 2004). The circular architecture in the Sibun also shares similarities with other examples from the Maya Lowlands, especially the Terminal Classic round structures at Uxmal (Kowalski et al. 1996), Nohmul (D. Chase and A. Chase 1982; Hammond 1985), as well as the early phases of the Caracol at Chichen Itza (Pollock 1936; Ruppert 1935 [Figure 3]). Like these northern counterparts, each building contains an interior room with a single doorway leading to the main plaza. An overarching similarity found in nearly all Terminal Classic circular architecture in the Lowlands is the presence of a low plinth or step construction that surrounds the perimeter of the building.

The descriptions of the excavations at Uxmal (Kowalski et al. 1996) and Nohmul (D. Chase and A. Chase 1982) enable a more detailed comparative examination with the Sibun examples (refer to Figure 3a-c). Overall, the design layout, construction technique, and dimensions are all strikingly similar. In each case, the masonry superstructure consists of low stub walls that is three or four courses high and encloses an interior room. Each of these buildings contains a single doorway with substantial stone doorjambs. While the interior of the Caracol was eventually enclosed with a masonry roof, no additional wall or vault stones were identified in the collapse of any of the excavations at Nohmul, Uxmal or the Sibun sites, suggesting that the low superstructure walls were topped with a perishable structure. At Nohmul, Uxmal and the Sibun sites, the outer masonry walls of the superstructure were faced with finely cut “veneer” type facing blocks and the inner walls were comprised of slightly smaller, more roughly hewn stone masonry. The three round structures from the Sibun each have an interior room that consistently measures between 5 and 6 m in diameter. The interior room diameter of the Nohmul and Uxmal round structures is slightly larger, approximately 8-9m in diameter, while the Caracol at Chichen Itza is the largest, measuring approximately 11m in diameter. Additionally, interior room size at each site appears to remain consistent through time. The four phases of the Caracol illustrate a striking consistency in room dimension, both spatially and temporally (see Figure 3d). Despite the growing size and complexity of the substructure throughout the site’s history, the size of the interior room is consistently 11 meters in diameter. The same is true for the examples in the Sibun where each structure contains multiple construction phases. The interior room size never changes.

In contrast, the design and dimensions of the substructures for Lowland circular architecture, which include a circumferential plinth or step, appear to be more variable than the layout of the superstructures. For instance, an earlier phase of the Caracol substructure at Chichen Itza, as well as the latest phase of the substructure of the round building at Uxmal, both measure 18 m in diameter, whereas the final phase of the substructure for Structure 9 at Nohmul measures 14.8 m; all three building substructures in the Sibun are somewhat smaller, measuring between 8-9 m in total diameter. The range of substructure size appears relatively proportionate to site size and the degree of architectural elaboration seems to express the varying levels of elite prestige at each site. Importantly, however, the overall similarity in design and layout of the superstructure (single room, narrow doorway, veneer-type masonry, low plinth) and the fairly consistent room size (6-11 m in diameter) suggests not only a tight

formulaic construction across a broad area of the Maya Lowlands, but also that a set of pre-ordained activities took place within these circular shrine structures that involved a fixed number of participants (Harrison-Buck and McAnany n.d.).

Ceramic Assemblages Associated with the Sibun Circular Shrines

Much of the pottery from the Sibun settlements reflects many aspects of the Spanish Lookout phase, a ceramic sphere representative of the adjacent Belize Valley defined by Gifford (1976) and others based upon ceramics from the site of Barton Ramie (see also Aimers 2002). Ceramic types such as Roaring Creek Red dishes, Belize Red dishes and plates, and Garbutt Creek Red bowls are representative of the Spanish Lookout Sphere and seemingly tied to a western Peten (Tepeu) sphere of influence (Figure 4). These types are found in the household assemblages of the Sibun and are also found associated with circular shrines and other elite ritual contexts, such as burials and caches. Alongside these traditional types, there is a group of ceramics found at Pechtun Ha, Oshon, and Obispo—the three sites containing circular architecture—that are notably different from the ceramics of the Belize Valley Spanish Lookout Sphere. This group of ceramics shows strong northern attributes and includes a variety of large basin and bowl forms with thick bolstered rims, some containing northern-style polychrome and incised designs (Figure 5). The forms and rim treatment are reminiscent of the Florescent Medium Puuc and Chichen Slate Ware basins (Brainerd 1958: Figure 41d, f and Figure 43 a-c; Smith 1971: Figure 16d and g).

Rather than direct imports, the quantity of northern-style ceramics suggests that they were probably produced locally in the Sibun Valley. The forms and surface treatments (red-slipped, waxy surface finish) suggest that they belong to the Kik Ceramic Group, established by Diane Chase (1982) at the site of Nohmul in northern Belize. Types from the Sibun settlements represented in this group include Cambell's Red deep bowls (Walker 1990:61-62, Figure 2.1a-b) and a large, thick-walled polychrome basin nicknamed "Fat Polychrome" (Masson and Mock 2004:387 and Figure 17.7d and e [Figures 5a and c]). Another variety of "Fat Polychrome" that is common in the Sibun assemblage is a smaller bowl form with a basal-break (Figure 5d). Similar examples from Altun Ha indicate that these smaller bowls have ring-based bottoms (Graham 1987: Figure 2g). The rim and interior of the vessel contain a waxy, deep red slip that is generally well preserved. Like the other variety of polychrome, the exterior below the rim contains black painted designs in abstract geometric forms. The bold, abstract motifs, incorporating spirals, cross-hatching, dots, commas, and u- and s-shaped motifs on the "Fat Polychromes," are similar to the painted designs of Sotuta Slate Ware Types from Chichen Itza (Brainerd 1958: Figure 92b-d; Smith 1971: Figure 17). A basin form with incised designs below the rim found at the site of Obispo (Figure 5b) is similar to incised Puuc Slate Ware basins, such as the Tekit Incised Type (Smith 1971: Figures 4c and 6k). Like the Spanish Lookout types listed above, the northern-style ceramics from the Sibun Valley settlements are associated with both ritual and residential contexts.

We believe that, like the circular shrines, these northern-style ceramics are a materialization of a coastal sphere of interaction that developed during the Terminal Classic, perhaps fueled by the northern trade networks that were established at this time. Similar northern-style ceramic types have been identified at

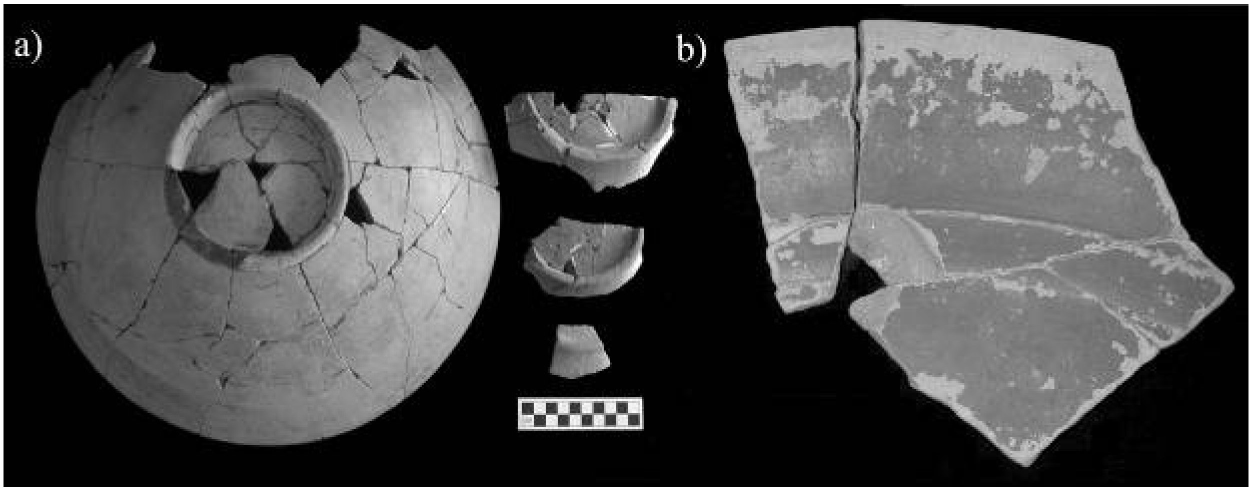

Figure 4. Examples of Spanish Lookout ceramics from the Sibun valley, including a) ring bases of Roaring Creek Red dishes and b) a Belize Red plate fragment (photographed by P. A. McAnany).

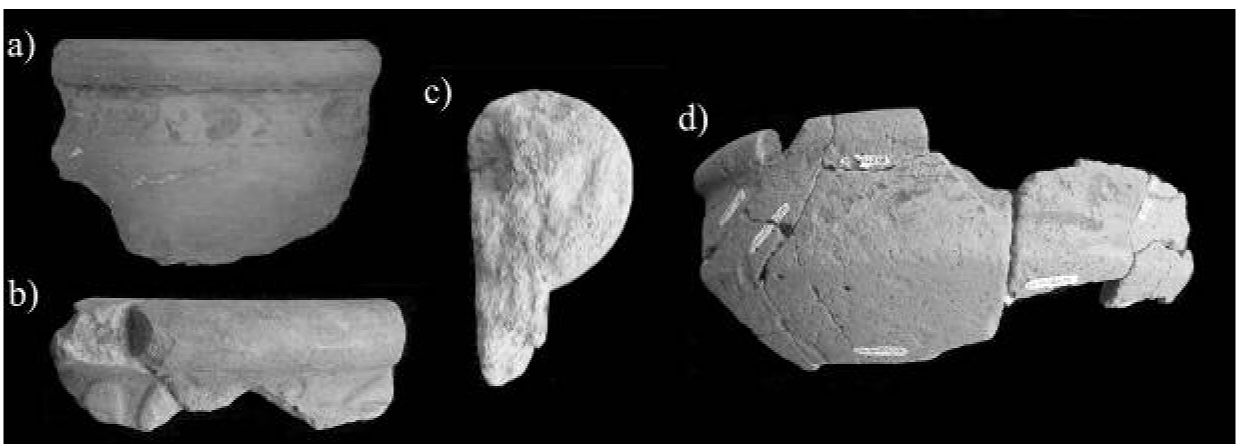

Figure 5. Examples of northern-style ceramics from the Sibun valley, including a) a "Fat Polychrome" fragment, b) an incised rim fragment of a large basin, c) a profile of a large bolstered rim of a thick-walled basin and d) a fragment of a polychrome bowl with a waxy, red-slipped rim and interior and polychrome design on the exterior below the rim (photographed by E. Harrison-Buck).

sites such as Nohmul, Cerros, Altun Ha, Lamanai, Northern River Lagoon, Pott's Creek, and San Jose—in Terminal Classic deposits at settlements located in the northern half of Belize (D. Chase 1982:497-498; Graham 1987:Figure 2g; Mock 1994:306-307, Figure 51; Masson and Mock 2004:387 and Figure 17.7d and e; Thompson 1939:114, 124-125, Figures 59 and 65; Walker 1990:61-62, Figure 2.1a-b). Importantly, these sites are located either on the coast or along rivers and creeks, at locales that were strategic for the movement of goods and ideas via canoe transport to and from the coast during the Terminal Classic period.

Marine Shell and Speleothems Associated with the Sibun Circular Shrines

In addition to the ceramic material, some of the most notable finds associated with all three circular structures from the Sibun included an especially high density of marine shell (Table 1). While the analysis

of artifact distribution patterns is still on-going, preliminary counts displayed in Table 1 show an obvious distribution pattern of marine shell directly associated with circular architecture. Looking at the far right column, you can compare raw counts of shell for excavations that we have conducted in various locales at Pechtun Ha, Oshon and Obispo. The corresponding cubic meters of soil excavated have not yet been calculated.

Nonetheless, the high counts of marine shell found directly associated with circular architecture is striking when compared to other contexts, including monument complexes, elite and non-elite residences and associated midden deposits where the numbers of shell were considerably lower or nearly absent.

Preliminary analysis suggests that a number of different species of marine shell from the Caribbean are represented, including a number of specimens from the Crown Conch family. In many cases, the tips or apexes of the marine shell were cut and sometimes the cut edges were smoothed down. Similar specimens found at the Terminal Classic site of Dzibilchaltun in Yucatan are interpreted as both decorative mosaic incrustations and shell trumpets (see Taschek 1994: Figures 19 and 20). A dual interpretation of marine shell functioning as decorative mosaic architectural adornments and musical trumpets is substantiated by *in situ* finds from the site of Punta Islote on Cozumel Island along the northeastern coast of Yucatan (Freidel and Sabloff 1984). Marine shell specimens, described as trumpets, were found embedded into the plaster of a conical roof of a Postclassic circular shrine structure at this site (Schavelson 1985: Figures 6 and 12). The shell trumpet adornments literally "sound in the wind," and were oriented in such a way that they create different tones depending on the direction of the wind. The high densities of shell deposits and their distribution around the exterior of the Sibun structures suggest that these shells may have been used in a similar fashion, perhaps as trumpeting adornments on the outside of these structures that signaled a specific function for these buildings (Harrison-Buck and McAnany n.d.). A plan view of the circular structure at Obispo shows the distribution of some of the marine shell scattered around the doorway area of the latest structure (Figure 3b).

In addition to marine shell, speleothems or cave formations are associated directly with the circular architecture in the Sibun (Figure 3b; also see Peterson, McAnany, and Cobb 2006). The incorporation of cave formations further supports the interpretation of a special-purpose shrine building. At Oshon and Obispo, small, portable-size speleothems were found on the exterior areas of both structures. At Pechtun Ha, the presence of large, cut speleothems were used as construction material for the round structure, specifically around the central doorway where they appeared to have functioned as sizeable doorjamb stones.

Interpreting the Ideological Significance of Circular Shrines

Interpretations of round structures vary. However, the material culture from the Sibun settlements lends support to the theory that circular shrines were ritual in function and possibly dedicated to the wind god, Ehecatl, an aspect of the feathered serpent, known as Quetzalcoatl or Kukulkan in Yucatec Maya (McAnany 2006; Pollock 1936; Taube 2001:111-113). At Chichen Itza, the interior room of the final phase of the Caracol (meaning "shell" in Spanish) contains four doorways encircling a central column with a spiral stairway leading up to a small chamber with a series of windows or apertures. "Although it has often been suggested that [the windows] were used for

astronomical observation, they may have had a more pertinent function--the creation of breezes within the wind temple" (Taube 2001:113). Karl Taube (2001:111) notes that the physical form of the Caracol building is like a shell, symbolic of its function as a Wind Temple dedicated to the god Ehecatl Quetzalcoatl. He further adds, "a creature of wind and water, the plumed serpent is commonly identified with the conch, a spiral shell that not only evokes the form of a coiled snake and whirlwinds but also converts blown air or wind into a thunderous sound" (Taube 2001:111). Nicholson (2000) and others have identified the conch shell pectoral as this deity's key emblematic insignia. In addition to the wind aspect (Ehecatl), water and fertility are among the many divine attributes of Quetzalcoatl (Ringle et al. 1998:184-185).

The ancient Maya believed that caves were the source of all water and fertility (e.g., life-bringing rain); thereby suggesting that speleothems, in the context of circular architecture, were another fitting symbol for this northern god. Interestingly, local informants from the middle reaches of the Sibun Valley have reported at least one cave from this part of the valley that contains a cache of marine conch shell. Karl Taube (2001:113) argues that wind temples metaphorically replicate the symbolic attributes of caves as sources of water and wind, manifest in the misty swirling clouds (a sign of rain) that escape from cave openings.

The material evidence, showing the selective use of marine shell and speleothems in association with circular architecture in the Sibun may lend support to a broader theory proposed by William Ringle et al. (1998) and others that suggests a cult religion, centered on the worship of Quetzalcoatl, spread throughout broad areas of Mesoamerica during the Terminal Classic. According to this hypothesis, noble warrior merchants from the prominent shrine center of Chichen Itza conducted long-distance trade operations along the coast and were responsible for the diffusion of this militaristic, feathered-serpent cult. In effect, merchants, canoe-paddling up and down the Caribbean Coast, established a network of political and economic alliances through prestige-goods exchange with local elites and ultimately established satellite shrine centers dedicated to the feathered serpent at these allied sites.

Site & Context	Quantity
Pechtun Ha	
Circular Shrine (Str. 100)	82
Elite Residence (Str. 104)	0
Elite Midden (Str. 109)	1
Monument Complex (Main Plaza)	0
Oshon	
Circular Shrine (Str. 402)	275
Elite Residence & Midden (Str. 401)	1
Elite Residence & Midden (Str. 424)	0
Non-elite Residence & Midden (Str.424)	7
Obispo	
Circular Shrine (Str. 479)	701
Elite Residence (Str. 475)	22
Monument Complex (Main Plaza)	5

Table 1. Unworked Shell Distributions from Pechtun Ha, Oshon & Obispo: Sibun Valley Excavations (1997-2003)

Conclusions

If a new religious order was introduced to elite groups in the Sibun Valley, it appears to have been redefined through the local lens of the Sibun Maya and their perceptions of the surrounding sacred landscape. The presence of northern Yucatan style architecture expresses a general connectedness to a broader cosmological framework. However, the integration of cave formations and marine shell in the context of these architectural complexes suggests a fusion of ideological concepts. Northern Yucatan ideology appears to have been translated into a locally understood symbol system that was historically inscribed with meaning, evident

through the long-term ritual use of caves in the Sibun Valley (Peterson 2005; López Varela 2003). The notably high densities of marine specimens and cave formations associated with circular architecture offer insight into the sacred significance of various features of the local landscape and how the Sibun Maya physically transported and spiritually transferred the meaning of these raw materials to their built environment (Ashmore and Knapp 1999). The integration of material symbols derived from the local landscape in the context of northern-style architecture suggests not a replacement, but an amalgamation of local and foreign cosmologies likely linked to increased north-south interaction taking place along the Caribbean coastline. The continued use of traditional Peten-affiliated ceramic types from the Spanish Lookout Sphere, alongside new ceramic types with northern-style attributes, supports the notion that traditional social identity was preserved during the Terminal Classic despite an increased penetration of northern influence within the valley.

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21 COMMONER CHOICE: NEW INSIGHTS INTO HOUSEHOLD PRODUCTION STRATEGIES DURING THE LATE POSTCLASSIC TO EARLY COLONIAL TRANSITION AT LAMANAI, BELIZE

Darcy L. Wiewall and Norbert Stanchly

In the Maya area, reliance on Spanish colonial documents has hindered understanding of local producers and communities and encouraged limited views of pre-Columbian commoner households. Current investigations at Lamanai have focused on how commoners actively participate in the process of culture change. Specifically, how they organized household production and gendered relations in response to the demands of the Spanish State. Analysis of multiple lines of archaeological materials suggests that households were responding with a number of different strategies. In this paper I will discuss these findings and endeavor to reconstruct the gendered relations of production involved in the preparation and procurement of animal resources from commoner household contexts at Lamanai during the Late Postclassic-Colonial transition.

Introduction

Most current discussions of ancient Maya society assume an opposition of commoner and elite classes that arises less from archaeological information than from Euro-American notions of contrast between urban and rural populations. Commoners are theorized as largely homogeneous, unchanging, and predictable socio-economic entities that are unable to participate in actively shaping complexity (e.g., Netting 1993; Robin 1999). Consequently, during times of political change Maya commoners are portrayed as being little affected because their household organization is focused on utilitarian and agricultural production which allows them to revert easily to self-sufficiency. As a result many Maya archaeologists under-emphasize the role of commoners in society (see discussions by Brumfiel 1992; Marcus 1995; Robin 1999).

Maya archaeologists' views have further been complicated by the survival of traditional Maya agrarian communities into the 20th century despite Spanish colonization. This has provided a foundation for analogical arguments that deny change through time, supporting the assumption that the condition of Maya commoners is diachronically consistent (e.g., Farriss 1984; Restall 1997). Furthermore, reliance on Spanish colonial documents has hindered understanding of local producers and communities and encouraged limited views of Pre-Columbian commoner households. Depending on our view of the role of commoners and how they were articulated into Maya society in ancient times greatly influences our views of the impact of the Spanish state on their lives. Spanish colonization was a catalyst for change in other indigenous societies and it had profound effects on household organization, particularly the gender relations of production (e.g., Silverblatt 1987).

As one of the few known locations of Maya/Spanish interaction in the southern lowlands, the site of Lamanai provides an excellent opportunity to identify and test current theoretical assumptions of the relative autonomy among "commoner" social echelons during times of political change. Research by Darcy Wiewall has focused on understanding how Maya commoner households in the community of Lamanai organized production and consumption in response to the Spanish state during the transition from Late Postclassic to

Spanish Colonial Periods. Based on previous Late Postclassic excavations in the southern Maya lowlands and ethnohistorical data Wiewall developed a set of eight temporally specific archaeological correlates to distinguish a Late Postclassic from a Colonial house lot and thereby the extent of changes in household organization, production, and consumption strategies.

Before turning to a discussion of the excavation data, it is necessary to first provide background information about several important aspects of the research. First, we discuss gender as an organizing principle and how households are a relevant unit of analysis for understanding gender relations in ancient Maya society. We then review data from Postclassic and Spanish colonial literature to evaluate what they tell us about how household production was organized. Next, we offer a brief outline of the types of tribute collected by the Spanish and how these demands may have affected the organization of Maya commoner household production, specifically their effects on gender relations. And last, we endeavor to reconstruct the gendered relations of production involved in preparation and procurement of animal resources from commoner household contexts at Lamanai during the Late Postclassic-Colonial transition. We attempt to people the past, by providing a holistic view of Maya gender relations of production that includes all potential actors who contributed labor to the household: men, women, children, and elders. We acknowledge that these suggestions are far from demonstrated explanations. Nevertheless, these working inferences offer prospective insights on how households, and the people, who comprised them, responded to Spanish colonial policies.

The Concept of Gender as an Organizing Principle of the Household

As a primary structuring principle, gender shapes relations of power and therefore sets parameters and establishes certain 'rules' for the enactment of daily life sex (e.g., Conkey and Gero 1991). However, in many gender archaeological studies we can see remnants of sexual division of labor studies in that the man/woman gender category has simply replaced the male/female sex category. As a result gender, originally problematized as a cultural construct, has become 'naturalized' and fails to conceptualize gender as a multiple, fluid and transmutable category. The focus on man/woman binary categories has obscured researchers' abilities to recognize other gender categories, such as children and elders. From cross-cultural research we know that gender is not always constructed as binary oppositions, nor is the Euro-American view of man/masculine opposed to woman/feminine the same in all cultures. Prior to colonization, many kinship societies had two genders, derived from the sexes, but not all. In some societies, gender develops and is modified through the course of a lifetime. Depending on when a culture determines the onset and termination of reproductive activity, children may be considered a separate gender, "those who cannot reproduce," or sexually neutral, until adolescence. Adults may experience transformations in their gender definition as they reach that period in life where they are supposed to end engagement in reproduction or their reproductive powers decline (Gailey 1987:34-38). So not only does gender change through the course of ones lifetime, the roles and responsibilities of the individual may also change.

Our androcentric view of children and elders as non-productive individuals has obscured their economic contribution to past societies. There is considerable evidence that in most prehistoric populations at least half of the living individuals in any given

community were children (defined here as people under the age of 18 years) and many individuals lived past the age of 50 (Chamberlain 1997:249). Cross-culturally we know that the labor of children and elders is important to household production. In order to move beyond the impasse of binary man/woman categories, we must take into consideration the possibilities of other genders and how they may have been critical to household provisioning. Gender, then, can be viewed as a culturally constructed ideology, that structures the roles and relationships of all actors—women, men, children and elders—their access to resources, appropriate roles in production, and opportunities for resource control both within the household and in society as a whole (e.g., Conkey and Gero 1991; Gailey 1987; Yanagisako 1979). Understanding gender, therefore, is critical to understanding the organization of past household activities and their gendered relations of production.

Households, as an elemental social unit, reflects and reinforces these underlying conceptual structures of society and by extension the arena in which gender relations are constructed and negotiated (Ashmore and Wilk 1988). A household can be defined as a co-residential group composed of various actors wherein membership is defined by shared domestic and economic activities regardless of whether its members are linked by kinship or marriage (e.g., Ashmore and Wilk 1988). Households are a relevant level of analysis for examining social change, for it is within these groups that basic needs are met and social roles defined (Wilk and Netting 1984). In all societies, households produce goods for their own consumption and for social exchange. What each household is capable of producing is dependent on its access to resources such as farmland, labor, technology, and forest products (Netting 1993; Wilk and Netting 1984). It is within this social space that actions and behaviors are continually reorganized on short and long-term bases. The arrangement of these different behaviors and economic tactics comprise the overall adaptive strategy of the household (Wilk 1991). During times of political change, households will select the best risk-reducing socioeconomic strategies in order to survive, thereby altering the activities of the members of the household and their gendered roles of production (Wilk 1991; Yanagisako 1979). In the process existing gender hierarchies may be intensified or new ones imposed (Gailey 1987). Thereby, household organization affects and is affected by relationships beyond the household.

Defining Lowland Maya Commoner Household Production

Before we can delve into addressing the impact of Spanish colonial institutions on Maya commoner households, we must first identify what we know about how household production was organized in the Maya Lowlands. I review data from the Postclassic codices and Spanish colonial literature most closely related spatially (northern Lowland Maya area) and temporally (Late Postclassic-Early Colonial) to evaluate what they tell us about household production in Postclassic Maya society. The purpose of this overview is to elucidate a baseline to discuss what areas of household production may have been most impacted by the imposition of Spanish institutions.

Postclassic Maya Codices

Codices serve as templates that guide appropriate social behavior and gender roles and therefore, provide the opportunity to examine how gendered roles of production were conceptualized in Postclassic Maya culture. We focus our review of Postclassic

Maya codices on the Madrid Codex because it depicts a range of behaviors and activities associated with household production. The majority of illustrations in the codex involve one or more deity figures, which are engaged in various activities such as hunting, trapping, planting, tending bees, and making offerings. Of these, female deities are engaged in various activities linked to marriage or sexual encounters, spinning and serving as the bearers of burdens and auguries associated with marriage and conception. On the other hand, male deities are linked to agriculture, trapping, hunting, and crafting deity masks and images. Interestingly both male and female deities are seen participating in activities related to beekeeping, making offerings, bloodletting, and weaving (Vail and Stone 2002:221). According to Vail and Stone's (2002) analysis of the codex, Maya women were broadly divided into two age-based categories: pre-menopausal women and grandmother figures. Weaving is typically done by old women, whereas burdens or auguries are associated with young women. This suggests that certain activities were related to age (Vail and Stone 2002:211).

Ethno historical Data

Early colonial censuses identify that the basic social unit in the northern Maya Lowlands was a multiple-family household living in a residential compound (Roys 1957:155; Roys et al. 1940:14). Household members produced goods primarily for their own consumption, but also for barter and payment of tribute (Tozzer 1941:23, 97). Tribute payments commonly consisted of wild game, turkeys, fish, salt, maize, beans, chile, honey, fruits, and cotton cloth and thread (Roys 1957). A variety of plants were grown in adjacent or nearby agricultural fields (*milpas*) and house gardens located in the residential compound provided additional fruits and vegetables (Tozzer 1941:89, 195, 196, 198). The residential compound was also where a variety of fowl, sting-less bees, which were source of honey and wax, and possibly deer and peccary were raised (Tozzer 1941:127, 201). According to Landa, the daily life of the Maya household was characterized by a well-defined division of labor, with men's activities focused on the milpa, hunting, and fishing, and women's activities focused on food preparation, textile production, house gardens, animal husbandry, and the care of their homes, and children. Both men and women had control over the products of their labor, selling these items at the market (Tozzer 1941:96, 127). He pointed out the reciprocity of labor in many aspects of household production activities, such as agriculture, hunting, fishing, salt gathering, weaving and spinning (Tozzer 1941:87, 96, 97, 127). These cooperative production activities were commonly divided by gender into a group of women or a group of men working together at their respective tasks; however, in some cases work was done on a community level and both men and women worked together (Tozzer 1941:87, 96, 97, 127).

Restall's (1997) investigations of colonial-period wills and testaments (ca. 1646-1813) provide a separate line of evidence for the gendered division of household production. Many inheritance items are gender specific, either being bequeathed to men or women. Maya men bequeathed agricultural land to their sons and all tools relating to agricultural production were willed to men without exception (Restall 1997:124-130). The property that women bequeathed or inherited was focused on the residential compound, or house plot. Men owned the orchards, trees, and vegetable gardens, but they left such property to wives, daughters, or both, and women were two times more

likely to bequeath a house plot in a will (Restall 1997:124-130). Likewise, the majority of bequeaths of beehives went to wives and daughters (Restall 1997:124-130). Items related to textile production, pigs and fowl appear in women's wills and are not mentioned in men's wills (Restall 1997:129).

Discussion of the data

In sum, there are four underlying themes that are present in all three sources. First, a fairly well-defined spatial division of labor between women and men characterized the daily life of the household with men more likely to work away from the household, maintaining milpa, whereas Maya women tended to work within the confines of the domestic sphere. Second, even with this spatial division many activity spheres were not restricted to either gender. In some cases both men and women could, and did, participate in activities together and many economic activities were shared among the members of the community. Furthermore, both women and men had control over the products of their labor, selling these items at the market and bequeathing these items to individuals of their choice. And last, according to these sources only the productive labor of women and men were important to household provisioning. With the exception of the Madrid codex, the productive labor of children and elders are not discussed.

We should keep in mind the inherent biases of the sources. First, it is doubtful that the ethnohistorical documents fully portray the realities of daily life from a commoner perspective and even less about lives of women, children and elders. The Madrid codex is presumed to have been written by Maya male elites and we know that Landa and his Maya informants were male members of an elite class. This elite-male position must have had some influence on their perspectives on the roles of Maya commoners indicating these depictions may not be either accurate or complete. The basic assumptions regarding the roles of Maya women and men in household production can be seen as either idealized societal roles and expectations, or reflections and constructions of 16th century Spanish Catholicism (Silverblatt 1987). The information drawn from wills and testaments dates to a period one hundred years after conquest providing at least two generations of time during which Spanish patriarchal inheritance patterns undermined traditional patterns of inheritance. Therefore, we should not assume that Spanish males perceptions of Maya gender relations are factual, nor should we assume that gender relations in contemporary Maya communities are remnants of a pre-Columbian past, but rather it should be considered a problem or a feature of social structure yet to be explained.

Changes Imposed on Maya Household by the Spanish State and Catholic Church

The central feature of Spanish colonial rule was incorporation of subordinate indigenous people into a world economic system. The Spanish *encomenderos* quickly determined (in order of economic importance) that cotton-related goods, beeswax, honey, salt, and domestic animals were the products by which they could produce profits and accumulate wealth. Both the Spanish state and Catholic Church imposed new institutions on the Maya household incorporating existing pre-Columbian tribute and labor systems into three new tribute-based policies—*encomienda,* ecclesiastical taxation, and *repartimiento*— that appropriated goods and labor (Cook and Borah 1974:9; Patch 1993:28).

Ethnohistoric data suggested three factors affected Maya household

organization and gender relations of production. First, the colonial tribute economy was based on legal and illegal systems of taxation that revolved around agriculture, animal husbandry, and textile production at the household level. In 1549, the first definition of a full-tributary was defined as a married couple. By 1583 the definition of a tributary changed and now defined all unmarried women between the ages of 12-60 and unmarried men between the ages of 14-60, as half-tributaries (Cook and Borah 1974:10n26, 11; Patch 1993:28). Annual taxes owed by both full- and half-tributaries in Colonial Yucatan in 1583 are shown in Table 1. Second, Spanish tribute requirements for native and non-native products, such as chickens and specific types of cotton-cloth and thread suggest further changes in the allocation of labor, production and consumption activities. And last, while the agricultural surplus of Maya men mainly fed local Spaniards, Maya women's cloth-related goods, domestic animals, honey, and beeswax products supported the Spanish export market.

The post-conquest mode of production may have remained familiar, but the amount and types of tribute demanded, and its ultimate use, was unprecedented. The imposition of multiple political-economic policies raises several questions about the Spanish State's role in shaping the organization of household production, and consequently, creating new gender relations of production. Specifically, Maya households had to increase agricultural production (corn, beans, and cotton), animal domestication and procurement (sting-less bees, chicken, and fish) and cloth-related goods (mantas and thread). They had to determine how best to reorganize and reallocate labor in order to increase production, possibly extending work time, increasing the size of the labor pool, specializing productive activities, or altering gendered relations of production. The inclusion of teenagers and elderly adults as half-tributaries influenced changes in the traditional gender relations of production between women, men, teenagers, and elder adults. And last, the Colonial administration dealt directly with Maya men, whether to collect taxes or arrange contracts for the control of women's labor and their products.

Consumption, Production and Organization of Lamanai Households

In the Late Postclassic period the community of Lamanai was a small, but flourishing political and economic polity in the southern Maya lowlands. Circa 1546, the community was incorporated into the encomienda system, which required individual households to pay specified amounts of traditional and non-traditional goods (Jones 1989). Early research led by David Pendergast focused on identifying the material culture of Spanish acculturation and syncretism through architecture and material goods in elite residential and communal spaces (Pendergast 1991). With the exception of the construction of two Christian churches, he found little evidence of acculturation in the community. Continuity was, in fact, by and large the norm in all aspects of material culture. This research, however, did not focus on non-elite households, nor did it address the increased demands by the Spanish state for local products.

Wiewall's research focused on excavation of commoner residential areas that specifically targeted the variations in local production and consumption strategies through multiple lines of archaeological material. The following section integrates several avenues of evidence in order to attempt to reconstruct the gendered relations of production involved in preparation and procurement of animal resources from commoner contexts at Lamanai during the Late Postclassic-Colonial transition.

TABLE 1: ANNUAL TAXES OWED BY A INDIAN FAMILY IN COLONIAL YUCATÁN 1583 (IN REALES)

CIVIL		**ECCLESIASTICAL**	
Tribute per full-tributary	18	*Obvención mayor* (males)	12 ½
One-half cotton manta[a]		*Obvención mayor* (females)	9
One Fanega maize[b]		(Cotton mantas, thread, salt, wax chickens, beans, chile, honey)	
Two Chickens			
One Turkey			
		Doctrina (one egg & one jar oil)	8
		Obvenciones menores	
		Baptisms (@ 3 reals)	
		Confirmations (@ 8 reales)	
		Weddings (@ 10 reales)	
		Matrimonial Inquires (@ 4 reales)	
		Burials, adult (@ 8-20 reales)	
		Burials, infant (@ 4 reales)	
		Testamentos (@ 4 reales)	
		Annual Average	5[c]
Total	18	Total	34 ½
Total Taxes Owed		52½ reales (8 reales = 1 peso)	

From Cook and Borah 1974:10; Farriss 1984:Table 1.1; Patch 1993:28. [a]One manta equals approx. 10 sq. yards. [b]One fanega equals 11 kgs. [c]Based on averaged lifetime of an Indian couple with three surviving children and three dying in infancy. An average over a 20 year period of one wedding with matrimonial inquiries, six baptisms, three confirmations, and two adult burials with testamentos for the couples parents (Farriss 1984:41).

We do not attempt to apply direct gender attributes to individual tool remains, but instead we explore who may have produced these tools and participated in these activities. It is important to note that these analyses remain ongoing. Nonetheless, we offer the following provisional thoughts on developments at Lamanai during this transitional phase.

Consumption

House lot excavations associated with four structures resulted in the recovery of greater than 7,000 faunal remains. Here we discuss only the results of the analysis of

5,000 bone and shell specimens from contexts assessed as midden deposits (Table 2). All of the midden deposits contain artifacts suggestive of dates ranging from the Late Postclassic through the Early Colonial transition period. Thus, this large faunal assemblage provides us with an opportunity to address some of the questions raised earlier with regard to the impact of Spanish arrival. We anticipated that there would be a decrease in the diversity of ecozones being exploited with a focus on resources from cultivated land and riverine zones. There should be a decrease in large mammals associated with secondary and canopy forest with a simultaneous increase in the importance of fish, birds, and turtles (Emery 1999). In addition, there should be evidence of the introduction of Old World species of animals, such as pigs and chickens, and a substantial increase in turkey, chicken and fish because these were three items required by each household as tribute payment.

It is abundantly clear that a pattern of faunal exploitation focused on the increasing utilization of lagoon and river species, as initially documented by Emery (1999), is present throughout the Postclassic period and continues into at least Early Colonial times. Briefly, this pattern can be characterized as one focused on the procurement of lagoon turtle and fish species. More than 96% of all identified specimens are representative of vertebrate and invertebrate species that inhabit the lagoon or nearby rivers and ponds. Turtles dominate the sample and, more specifically, the Central American river turtle (*Dermatemys* mawii) is the dominant species in the assemblage. Carapace and plastron fragments from this species account for more than 87% of all identified specimens and over 50% of the entire faunal assemblage. At least three other local turtle species are also present though in far fewer numbers.

Fish species identified include both the bay snook and blue catfish, both found in the New River lagoon and surrounding waterways today. Pemolodid catfish and jack fish are also present and, although the presence of jack fish is suggestive of coastal exploitation, jack fish are known to travel several kilometers up the New River today. Other species inhabiting the lagoon and nearby waterways include at least four species of shellfish, namely *jute*, apple snails and freshwater clams.

It should be noted that there were greater quantities of fish and mollusks observed during excavation of the midden deposits, however, the preservation was very poor and the bone and shell remains disintegrated during recovery. This is in sharp contrast to the excellent preservation overall of the faunal material. We return to what these observations may imply below in the section on production. Of interest, crocodile remains were also identified and used as a food source.

Although lagoon and river species dominate the sample, there are also a number of larger mammal species present including white-tailed deer, peccaries, and tapir. Smaller mammal species represented include dog, paca, and armadillo, which appear to increase in importance, but are not exploited in large numbers. Birds are also present but in fewer numbers and, unfortunately, many of the long bone specimens examined were too fragmented to permit secure identification of species. However, some turkey was noted but we are unable to determine if these are bones from the wild ocellated turkey or from domesticated turkey. The majority of the bird long bone fragments appear to be from medium to large sized species such as turkey.

Table 2: Distribution of Identified Taxa by Structure/Feature

Taxon	Str. N12-4	Feat. N25/E50	Feat. N350/E40	Feat. N425/E10	Total
Turbinella angulata	-	-	1	1	2
Cassis tuberosa	-	1	-	-	1
Citarrium pica	1	-	-	-	1
Pachychilus glaphyrus	2	14	3	4	23
Pachychilus indiorum	3	1	-	3	7
Pomacea flagellata	2	10	1	7	20
Nephronaias sp.	1	4	-	1	6
Family Ariidae	-	1	-	-	1
Family Carangidae	-	5	-	-	5
Ictalurus furcatus	-	2	1	1	4
Petenia splendida	2	27	1	14	44
Class Anthozoa	-	1	-	-	1
Crocodylus sp.	1	11	-	10	22
Dermatemys mawii	111	1,800	115	329	2,355
Staurotypus triporcatus	4	32	2	24	62
Trachemys scripta	-	29	15	13	57
Family Chelonidae	1	-	-	-	1
Agouti paca	1	-	-	-	1
Canis familiaris	3	-	-	7	10
Dasypus novemcinctus	5	6	-	1	12
Equus caballus	-	-	-	12	12
Homo sapiens sapiens	1	-	4	-	5
Odocoileus virginianus	5	15	4	2	26
Family Cervidae	4	6	-	1	11
Sus scrofa	-	1	-	-	1
Tapirus bairdii	-	1	-	-	1
Family Tayassuidae	3	4	-	-	7
Orthogeomys hispidus	1	-	-	-	1
Meleagris sp.	-	-	2	-	2
Total	**151**	**1,971**	**149**	**430**	**2,701**

With the above information in hand there are a few general observations that we can offer about the exploitation of animals at Lamanai during the Late Postclassic to Early Colonial transition at the household level. The data do not suggest any major changes in animal procurement patterns from the Postclassic into the Colonial period. On the contrary there simply appears to be a continued if not greater focus on local lagoon and river species.

Overall there appears to be a greater number of smaller to medium sized mammal species being exploited, even as locally available terrestrial games are present. There is no direct evidence of Spanish influence as anticipated. Most interesting is the overall lack of bird in the deposits, particular, the absence of domestic chicken (*Gallus gallus*). This is in sharp contrast to how quickly households in northern Yucatan integrated chicken into the domestic unit, as thousands of chickens were collected as tribute within just two years of the Spanish requiring poutry as a tribute item (Cook and Borah 1974:10). However, the increase in fish consumption during this time period may be indirect evidence of Spanish influence. Fish consumption clearly increased during this time period, implying that even if quantities of fish were leaving Lamanai as tribute, quite a substantial amount was being kept for local consumption.

Procurement and Production

Cooking vessels, net sinkers, and projectile points are material correlates of cooking, fishing, and hunting, and thereby can be taken indirectly as indices of production related to procurement and preparation of animal resources. Ethnohistoric and ethnographic sources identify the comal and the cooking pot as the two basic cooking vessels present in households. These different vessel types produce different dishes: tortillas on the one hand; soup, stew, and beans on the other. Differing ratios of these vessel types can inform us of changes in patterns of food preparation and work schedules. Cooking vessels are represented in the sample by the rims of all types of thin to medium-walled, short-neck jars, as well as, specimens that bear exterior soot deposits and interior surface pitting. Yglesias Phase utilitarian cooking jars and shallow dish/bowls in a range of sizes are the primary components of the assemblage to the exclusion of comals (Graham 1987:91). Cooking vessels produce labor-saving “one-pot” meals typically composed of vegetable, bean, deer, wild game and/or and fish stews (Gann 1918:22, 27; Tozzer 1941:91). As noted earlier, in many instances fish bone and mollusk shell were poorly preserved in midden deposits. This coincides well with food that has been boiled and prepared for soups and stews. In addition, there were discrete assemblages of fish bones or shells observed during excavation which were inferred as the dumping of the remains of a one-pot meal. These lines of evidence suggest that one-pot meals of fish or shellfish stews may have been a preferred food item and method of preparation.

Line fishing and cast nets would have been the two most common procurement techniques, though pot fishery and seine nets were also probably used (Gann 1918:25; Tozzer 1941:156,190). Net sinkers used to weight fishing lines and nets illustrate evidence of fishing technology. Pendergast noted that in the Postclassic period, standardized, fired-clay, ball net sinkers replaced the Classic period notched, reused pottery sherds (David Pendergast, personal communication, 2003). We anticipated that standardized net sinkers would increase since tools related to fishing technologies should increase as the Spanish demand for fish increased. Interestingly this is not the case. Notched, reused pottery

sherds are dominant to almost the exclusion of fired-clay ball net sinkers.

Ethnohistoric documents also tell us that fish, turtle and birds were speared, harpooned, and shot with bow and arrows (Gann 1918:25; Tozzer 1941:190, 202). Based on previous excavation at Lamanai and Tipu a decrease in lithic tool diversity and material, specifically a decrease in obsidian, and an increase in projectile points and non-formal tools made on local materials was anticipated (Graham 1991). Small side-notched projectile (SSNP) points and informal flake tools comprise 86% of the total lithic assemblage. Unifacial and bifacial projectile points range in sizes between 20-42 mm in total length and are manufactured on chert and chalcedony biface thinning flakes, many of which appear to have been recycled. There is a high degree of variability present in the overall forms of SSNP points. Only two obsidian SSNP were recovered and these are less than 35 mm in total length and manufactured on recycled blades. A high number of SSNP points were broken during manufacture as a result of inclusions in the material and use of excessive force during flake removal. Many cores and primary and secondary reduction flakes exhibit step/hinge flake terminations.

Household Organization

In Maya households, women are regularly associated with the preparation of food. In our assemblages, cooking pots are the focus of food preparation to the exclusion of comals. These vessels produce labor-saving “one-pot” meals while comals are used for more labor-intensive foods. Comals are linked to the time consuming activities related to maize processing and tortilla preparation (Boremanse 1998; Brumfiel 1991). The absence of comals implies that this labor consuming activity was prohibitive. It further indicates that their time was being reallocated into more productive arenas, possibly toward an increase in the production of textiles or other tribute items required by the Spanish. While cooking is attributed to adult women, ethnographic documents tell us that by age seven or eight young girls assist their mothers in food preparation (Boremanse 1998:81). The ease of preparing stews could have been easily allocated to young girls and elder women.

Hunting and trapping of large game is a productive activity regularly associated as with adult Maya men (Gann 1918: 24-25; Tozzer 1941:31). Throughout the year, deer frequent the milpa margins, as such; this activity was easily embedded into the daily round of men going to and from the milpa. However, young boys were responsible for catching small mammals in snare traps and cages (Gann 1918:25; Tozzer 1941:191, 204), a pursuit that today often provides the only meat a family receives for several days (Hovey and Rissolo 1999). Boys also used slings to hunt squirrels, birds, and other small mammals (Gann 1918:25). Furthermore, the boys also prepare and cook these animals (Hovey and Rissolo 1999). So while hunting is attributed to adult men, and cooking is attributed to adult women, here we have young boys responsible for the procurement and preparation of food.

Fishing is another activity that is attributed to adult men. Net fishing is done by groups of men, but net fishing, as well as, line and pot fishing, are activities that all members of the household could have participated in. Gann (1918: Plate 2) observed Maya girls fishing, and today in Indian Church Village in northern Belize, line fishing is an activity that young boys and girls participate in together. Children and elders are particularly suited for participating in activities related to line and pot fishing and hunting of turtle. Both activities can occur together and do not

require specialized skill. Furthermore, the recovered net sinkers or line weights were fashioned quickly and easily from ceramic sherds.

Bow and arrow technology, probably introduced at Lamanai in the Late Postclassic period (Graham 1991) could have affected the frequency of birds and fish in the archaeological record (Emery 1999). We add that in turn it would have affected who participated in the production of projectile points and procurement of the animals. It is plausible that men, women, young people and elders made and used stone tools (Finlay 1997). The types of tools recovered indicate the presence of novice or inexperienced flint-knappers as seen in the evidence of hinge or step fractures on cores and flakes and the increase in the use expedient flake tools (Finlay 1997). Furthermore, the heterogeneity of the overall SSNP point assemblage suggests that a variety of individuals were manufacturing these tools. Many of the projectile points appear to have been made on recycled flake tools and debitage that could have been easily scavenged from earlier occupations. Even if children were not participating in the production of SSNP points, they surely would have known how to use bow and arrow technology and could easily have been hunting birds, fish, and turtles.

Discussion

As a household undergoes change, specific behaviors or activities may be abandoned or initiated, or the proportions of different activities may change relative to others. These changes may also alter the activities of members of the household and their gendered roles of production. Food preparation and procurement are two areas that are most sensitive to changes in the work schedules of household members (Brumfiel 1991), since all households must produce food in order to survive. It is clear in our material assemblages that there is an overall decrease in labor expenditures related to food preparation and procurement reflecting a new level of efficiency in organization and production systems.

The vertebrates and invertebrates being consumed were located in close proximity to the household and could have been procured with minimal effort. The ceramic and lithic technologies related to procurement and processing of animal resources can be seen as "time-saving" labor expenditures. The tools used to procure the animals were quickly made with minimal effort or time invested in their production. The methods of food preparation are simple one-pot meals that also require minimal time investment. We suggest that the observed changes are indicative of changing work schedules and changes in gendered relations of production. During times of stress every able-bodied individual would need to contribute to provisioning the household. It appears that a greater number of individuals with fewer specialized skills were producing tools and participating in procurement and preparation of animals for consumption and tribute. We would propose that the evidence indicates that labor is being allocated to children and elders in these Late Postclassic-Colonial deposits. The increased demands by the Spanish state for women’s products and the inclusion of teenagers and elders as tribute subjects must have affected what other household members did and it would have contributed to changes in gender relations of production expanding individual’s roles and responsibilities. Most discussions of Maya gendered relations of production follow closely the binary division of labor between men and women to the exclusion of the productive labor of children and elders. But this may not have been the way the Maya viewed gender roles and responsibilities. There are several hints in documentary sources that children and

elders were considered a different gender, but this topic needs to be explored more fully. The data presented in this paper implies that there were more than two genders participating in household production at Lamanai. If we want to have a better understanding of ancient Maya household organization we need to include children and elders as active participants that contributed their productive labor to the household.

Conclusion

In our paper we have focused on the impact of Spanish colonial economic policies that would have impacted Maya households, suggesting that the changes in procurement and consumption of animal resources may reflect these impositions. We also attempted to provide a holistic view of Maya gender relations of production that included all potential actors who contributed labor to the household: men, women, children, and elders, instead of relying on the binary categories of man/woman. Current archaeological investigations at Lamanai are focused on evaluating, defining and differentiating the effect of Spanish political change on the daily life of Maya commoners. This is pertinent if we continue to make inferences from Spanish colonial documents to the pre-Columbian past without understanding the structure of the political-economic relationship between Maya households and the Spanish colonial regime during a critical, but rarely addressed transition in Maya history.

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22 THE PROGRAMME FOR BELIZE ARCHAEOLOGICAL PROJECT: RECENT REGIONAL INVESTIGATIONS

Fred Valdez, Jr. and Lauren A. Sullivan

The 2004 and 2005 field seasons of the Programme for Belize Archaeological Project (PfBAP) investigated several regional research interests. Among these were small rural and household studies such as the Medicinal Trail Site and escarpment settlements. The discoveries of significant architecture, agricultural innovation, and economic activity at these "commoner" settings are described and placed into a regional context. Continued excavations at larger sites in the PfBAP's project area are also discussed as related to the general political landscape. How each of these investigations ties into the Maya occupation (chronology), is explored from the regional perspective.

Introduction and Background

This paper provides a general introduction and overview to the research done by the Programme for Belize Archaeological Project (PfBAP) and includes some details of our findings from the 2004 and 2005 field seasons. Beginning in 1992, the PfBAP has maintained a continued presence conducting research in northwestern Belize. The research area is located on property owned by Programme for Belize known as the Rio Bravo Management and Conservation Area and is part of the archaeologically defined Three Rivers Region (Adams and Valdez 1995). The Three Rivers Region is a geographically defined region of approximately 2,000 square kilometers that is bounded by the Rio Azul and its associated flood plains on the northern and western margins, the Booth's River on the eastern edge, and the site of Chan Chich arbitrarily setting the southern border (Figure 1).

Research by the PfBAP continues to include survey, mapping, and excavation in an attempt to understand the various interrelationships between minor and major settlement areas (Valdez 2005a). The emphasis remains on multidisciplinary research in addition to traditional archaeological studies as the best opportunity for varied perspectives of the ancient Maya. This multidisciplinary research includes soil studies, settlement surveys, water management, large and small site excavation, and associated artifact analyses among others.

The PfBAP intends to produce a comprehensive, integrated view of the NW Belize region within the Maya lowlands from ca. 1000 B.C. to A.D. 900. This region includes at least five urban centers (La Milpa, Dos Hombres, Gran Cacao, Maax Na, and Great Savannah) and more than 40 towns, villages, and hamlets. Each level within the settlement hierarchy is being sampled and site functions and occupational chronologies for the region are being determined (Valdez 2005b).

These research trajectories within the PfBAP allow for analysis and interpretation of many ancient Maya activities and have revealed overall patterns that might be missed with a single site centered approach. While each project working in the area has its own specific theoretical approach, the wealth of sites and archaeologists working together has allowed for an overall research focus that emphasizes regional interaction and interdependence.

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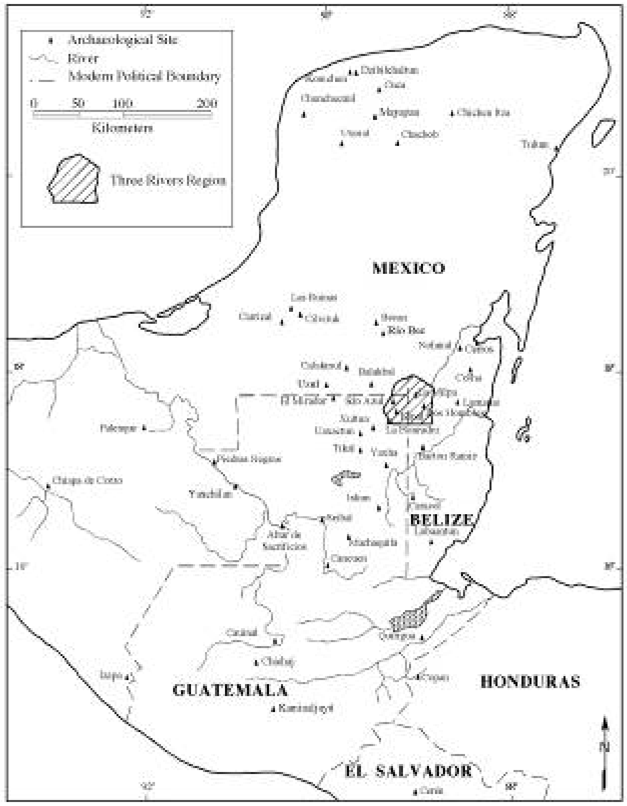

Figure 1: Map of Three Rivers Region

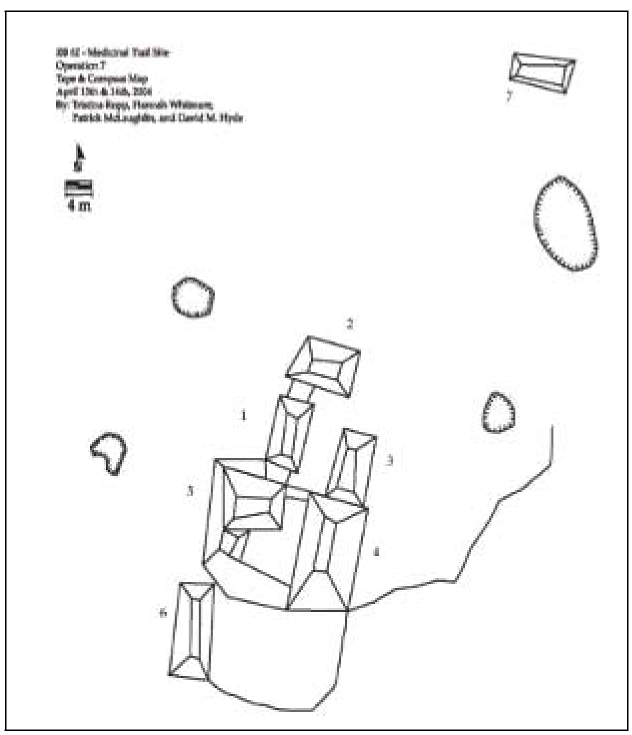

Figure 2: Map of Medicinal Trail Site (Hyde 2005)

Although large site investigations are an important part of our research (such as those conducted at Gran Cacao, Dos Hombres and Maax Na), the PfBAP also continues a significant focus on small sites and rural settlements. Large site research as well as smaller settlement (site) studies will be addressed concerning their occurrence across the landscape (Valdez 2005b).

Data produced by a comprehensive research design may facilitate analysis of social, economic, and political organization. The model may then be used to test a variety of specific hypotheses for prehistoric Maya society, in particular socio-political organization.

It is anticipated that an important result of the PfBAP investigations will be an understanding of the structure, functions, and development of part of a Maya regional state. Understanding their structure may add significantly to the new body of data that is broadening our view of Classic Maya civilization and permitting detailed comparisons to other early civilizations.

One function of the current program is to help evaluate the effectiveness of a regional study within the Maya area and to refine regional research procedures. Other regional research efforts (the Belize Valley, for example) have begun in recent years, but are far from complete. A long-term regional project, the Dolores Project in Guatemala has had a significant record of research, but the results are not fully reported.

Part of the value of our work is in both land use and environmental planning since preservation of cultural and ecological resources is increasingly dependent on ecotourism and renewable resource strategies. Both of these then depend, at varying degrees, on specific identification of a region's resources. Our research will provide information to mitigate the effects of modern human populations on archaeological sites in the RBMCA as the Programme for Belize incorporates them into the itinerary for visitors.

The Prehistoric Maya Landscape

As stated above, the large sites that are known on the Rio Bravo Management Conservation Area currently number five. These site include La Milpa, which is the third largest site in the country of Belize (following Caracol and Lamanai), Dos Hombres which is approximately 70% the size of La Milpa, Maax Na, and Gran Cacao which are nearly the size of Dos Hombres, and Great Savanna, unmapped, but reported to be near the size of Gran Cacao).

The development of the large centers in proximity to one another (e.g., DH is 12.5km S/SE of La Milpa, and 8km SE of Maax Na, and Maax Na is 7km S of LaMilpa), brings into question a number of social-political issues. What was the number of elites, given so many significant centers? How did they interact with each other? What and how much did the elites do to control and maintain their polities (including the maintenance of relations between large sites, smaller centers, and agricultural communities)?

The survey and mapping of the settlement zones around these centers indicate that the land was utilized and at times modified extensively and intensively. These investigations concerning the smaller settlements and general landscape manipulation are a significant focus of our research.

The PfBAP continues to ask, how were the Maya utilizing the NW area of Belize for their daily existence? What kind of life did most of the Maya experience? Properly documented data concerning settlement locations, artifacts (production and consumption), and general patterns of land use all serve to help define ancient Maya life

in NW Belize (Valdez 2005a). One of the key features of this region is the heterogeneous environment that created a variety of environmental niches and unevenly distributed resources creating a highly complex system of microenvironments.

The terrain between the major centers is filled with smaller sites, groups, houses, terraces, and other features indicating a complete and busy utilization of the region (Scarborough et al. 2003). Lithic production zones as well as areas of intensive agricultural activities, such as hillside terracing on escarpment faces and knolls, are among the more easily detected activities. Ancient Maya wells have been documented that could have provided some settlements with dependable water.

A pattern thus far revealed for most of the rural areas indicates an ancient farming and/or production community characterized by integrated hydrological and residential architecture (water catchment basins, channels directing water to certain areas of a site, check dams) (for example, at Medicinal Trail). Cross-channel terraces are another form of landscape modification associated with several outlier settlement zones as evidenced near the Barba Group. In any case, the various features of Maya adaptation in these “away from the center areas” represent substantial planning and coordinated construction by the ancient Maya.

Data concerning dispersed settlements and the specific interpretation(s) of these data have been significantly accomplished by many researchers on the PfBAP often in the form of theses and dissertations including the work of Hugh Robichaux (1995), Jon Lohse (2001), and Jon Hageman (2004). Others continue with settlement studies and expanding our understanding of the support populations in the RBMCA (Trachman (2005), Sunahara and Meadows (2005), and Walling et al. (2005).

It seems, given the present studies, likely that within the RBMCA were many resource specialized communities (Scarborough et al. 2003). This is further supported by the presence of occupied microenvironments and may account for the differences in settlements across the landscape.

Clint Swink, professional potter and artisan, has provided recent research into ceramic production and demonstrated that many local types of clay are excellent for production of clay bodies as well as slips. The availability of locally useable clays may have also played a role in the adoption of pottery production as an auxiliary economic endeavor as has been suggested for areas surrounding Palenque and Tikal.

Localized specialization has been observed in the difference in jar neck height between Tinaja Red exterior folded rim jars recovered from Dos Hombres and from Las Abejas, a site located up an escarpment and across rough terrain from the nearest water source, possibly necessitating a taller neck and rim to prevent water spilling from the vessel.

Another localized difference has been noted in Cayo Unslipped vessels. These small differences between sites in the region have allowed us to speculate on the organization of Late Classic pottery production and distribution centered on local consumption and rural communities as has been proposed for the nearby site of Tikal by Fry (1990).

One interesting find is that it may have been highly unlikely that ceramics were produced during the rainy season, presuming the past seasonality was similar to today’s climate. If correct, pottery production may have been a seasonal endeavor at least in terms of construction, drying, and firing.

Similar interpretations into local activities can be derived from the lithic data. Walling et al. (2005) have noted that among the smaller settlements, simple utilized flakes, chert debitage, and cores are found in most, if not all, household groups and indicate probable *ad hoc* tool creations on a local level. Sites such as El Arroyo, El Intruso, and several loci of lithic production identified by Meadows (Sunahara and Meadows 2005) indicate specialized economic activity.

The majority of stone tools and associated refuse material recovered in the area (at least 90%) were produced from locally available resources (Hyde, personal communication 2005). Tools of imported materials tend to be associated with specific/special contexts, (E.g. Dos Hombres tomb covered with ca. 23,000 pieces of obsidian and several caches at Dos Barbaras with imported chert).

The notion of a generally healthy population for most of the Maya periods is supported by the skeletal remains. The bones also show, however, various evidences of trauma and physical ailments (arthritis) common to many populations (Frank Saul and Julie Saul, personal communication 2004).

As a starting point, we understand that the heterogeneous environment created a variety of environmental niches and unevenly distributed resources. This diverse setting may have resulted in different and numerous economic activities, many that are difficult to ascertain due to issues of preservation, but the PfBAP continues to seek means of exploring all of the possibilities.

Current Research

Several areas of the Rio Bravo Management and Conservation Area were investigated archaeologically in the 2004 and 2005 seasons. Here we briefly review/summarize some of the more recent and ongoing research conducted.

Stan Walling's research on the Rio Bravo Escarpment has defined many interesting features (Walling et al. 2005). The site under investigation, Chawak But'o'ob, which Walling describes as a "Late Classic suburban household site" (Figure 3), is an agricultural community consisting of approximately 300 platforms and extensive terracing, well developed and sophisticated hydrological architecture, including a sizeable reservoir, and a recently discovered ballcourt. The site is located on the escarpment approximately 2km southwest of Dos Hombres. Another unique feature of this agricultural center is the fact that it could look down into Dos Hombres (their presumed social and political superiors).

The Medicinal Trail site (Figure 2), under investigation by the Three Rivers Archaeological Project (of the PfBAP) is an agricultural community that most likely fell under the control and/or influence of La Milpa. The most recent investigations here have focused on one of the groups that make up the site (Hyde 2005; Me-Bar 2005). This group consists of three courtyards as well as an outlying structure associated with one of the numerous depressions that surround the group. Associated terrace features have also been documented. A significant amount of Preclassic occupation for the northern and middle courtyards is noted. However, based on the ceramics recovered, the southern courtyard appears to have been a later addition.

Excavations in the northern courtyard were particularly interesting. A well preserved plaster floor and two associated Late Preclassic (Sierra Red) reconstructable vessels were encountered. Below this floor was fill material resting on another floor which was on two low walled platforms. Both of these sub floor structures rested on a floor that was painted red as evidenced by

remains of pigment. After nearly two meters of fill, a Late Preclassic burial placed on bedrock was encountered.

Further settlement studies are being conducted by Kay S. Sunahara and Richard Meadows as part of their Formalized Landscape investigation (Sunahara and Meadows 2005). Their study area covers over 25 square kilometers located in the southern portion of the Rio Bravo Conservation Area, near the nexus of the large bajo that divides the Rio Bravo and La Lucha escarpments and the basin of the Rio Bravo. To date approximately 35 small building groups have been located. Their goal is to understand landscape modification in terms of density and variation as well as devise a sampling strategy that will allow an understanding of the occupation of a group through time, and whether the engineered landscapes we view on the ground surface were actually built and occupied coevally.

The site of Dos Barbaras has seen several years of research under the direction of Brandon Lewis. Dos Barbaras is a small, primarily Late Classic, community composed of eight courtyards, designated A-H (Figure 3).

One of Lewis's research questions is to investigate the role of small sites within the regional political hierarchy. "To what extent do these small-to-medium centers participate in issues of wealth distribution, labor control, and the overarching political ideology? Toward this end, excavations have been aimed at examining the internal organizational variability at Dos Barbaras and how this compares to sites of greater or lesser rank" (Lewis 2005).

A series of excavations at Structure 6 (in Group B and the largest structure at the site) indicate that this structure may represent the primary residence of the Dos Barbaras' ruling elite (Me-Bar and Lewis 2005). Several caches (all Late Classic) were discovered while examining the building's construction history. These caches are quite similar to the general Late Classic "face vessels" found throughout northwestern Belize and are usually assumed to represent offerings for either ancestor worship or significant construction episodes.

Another interesting feature of this site was revealed by a series of test units (1x1, 1x2, and 2x2 meters in size) investigating Group G. Architectural data and associated midden indicate that this group served as a primary residential unit with a single occupation dating to the Terminal Classic.

The team of Shaw, King, and Chiarulli (2005) conducted research during the 2004 and 2005 field seasons at the sites of Maax Na (located at the top of the La Lucha escarpment about 7km south of La Milpa) and Bolsa Verde (RB-50), a small center located between Maax Na and Dos Hombres at the top of the first rise of that escarpment.

These excavations were designed to further investigate certain questions about an elite residential acropolis south of the site center (Figure 4). Ma'ax Na was initially colonized in the Late Preclassic and there is evidence of continued Early Classic occupation. The site also has a significant Late Classic component, but one that does not appear as extensive or as long-lived as that of its comparable neighbors Dos Hombres and La Milpa. A number of different activity areas are represented at the site, from quarries to residences, suggesting an active, permanent community engaged in a number of different pursuits.

Bolsa Verde and its surrounding area, on the other hand, appear to have developed primarily during the Late Classic and to be mostly agricultural in nature. Shaw and King suspects that this community survived by the exploitation of several specialized niches, ranging from bajo farming to terraced fields

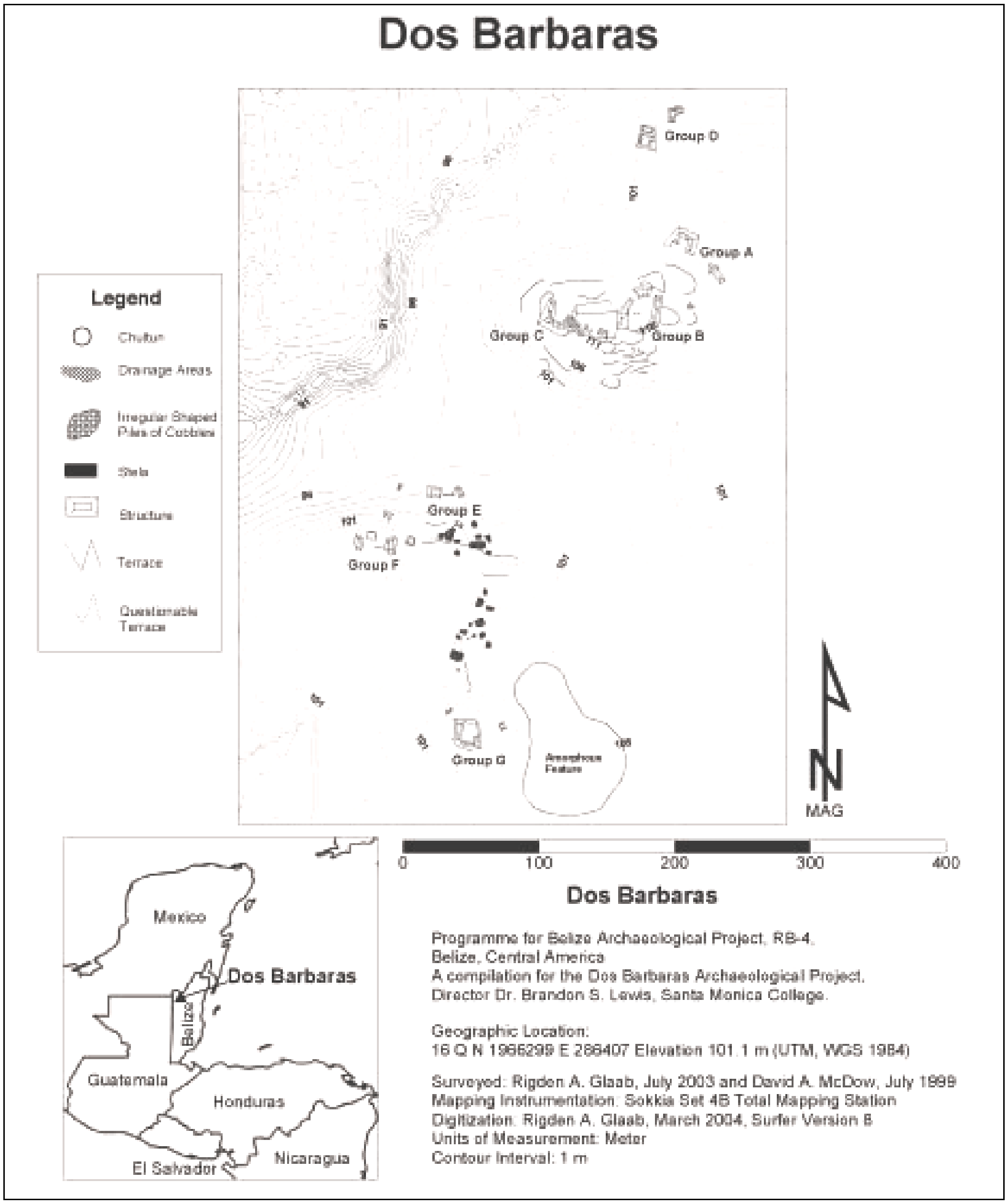

Figure 3. Map of Dos Barbaras (Lewis 2005)

(Shaw, King, and Chiarulli 2005). There is a likelihood as well that specific crops were being grown here, perhaps high value crops like cotton and cacao, as the community seems relatively affluent, judging from their material inventory. At Bolsa Verde, the mapping and testing focused on the Chicle Group, a well-defined patio complex occupying a small knoll roughly 0.75 km northeast of the site center.

Brett Houk conducted limited excavations and testing at the site of Say Kah during 2004 and 2005. Say Kah (Figure 5) is one of many small centers dotting the landscape between the major sites in the lowlands. The monumental architecture is located on a U-shaped ridge with drainage flowing into two reservoirs. The main plaza is on the end of a narrow ridge and is surrounded by eight buildings. Structures 5–8, all five to eight meters tall, forms the

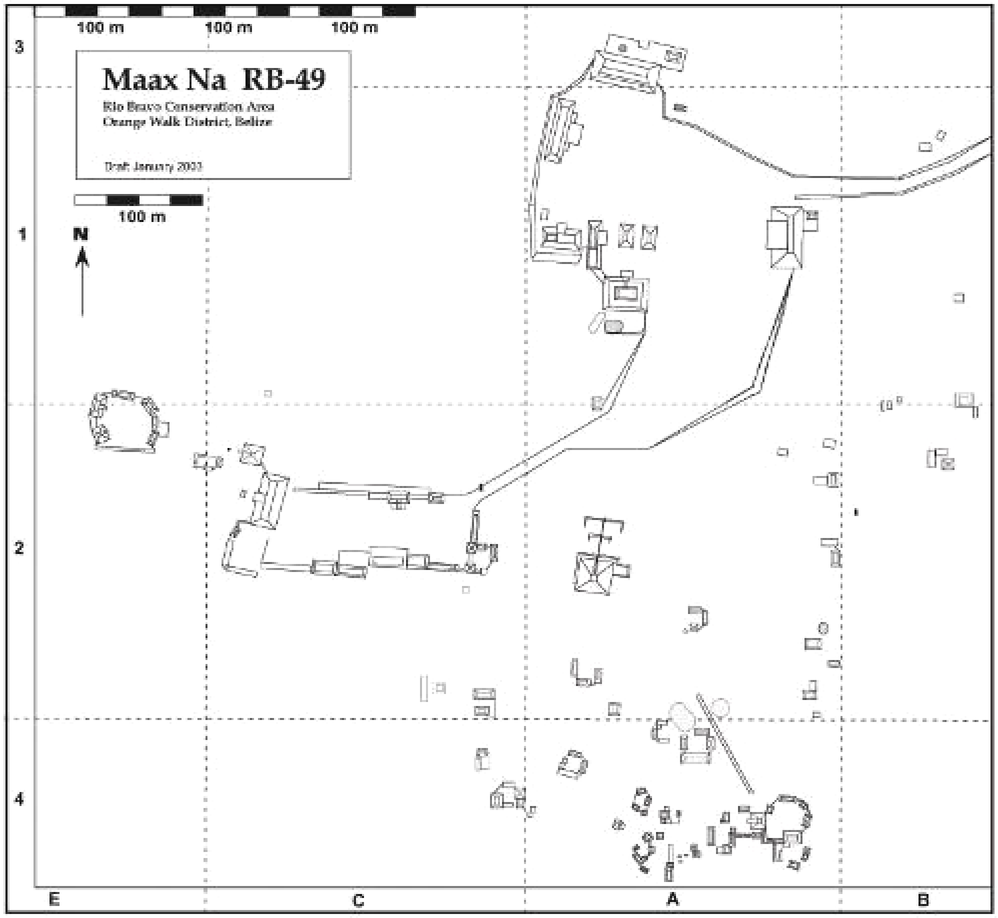

Figure 4. Map of Maax Na (Shaw, King, and Chiarulli 2005)

northern boundary of the plaza. Structures 1– 4 form the south end and are the largest buildings at Say Kah. Structure 1, the tallest building at the site, is a range building approximately 12 m tall.

Unfortunately the site has been heavily looted although Houk's pilot investigations have successfully identified and profiled the looters' trenches that could yield the most amount of architectural information. One of the trenches revealed (Structure A-4/A-5 Sub) a red-plastered building that appears Late Preclassic in form. This red plaster structure was partially severed by a later structure.

Within the fill covering the Late Preclassic Structure (A-4/A-5 Sub) multiple molded stucco fragments were recovered. Houk and Lyndon (2005) suggest that these fragments indicate that a mask or façade was originally located on the exterior of the structure (A-4/A-5 Sub) and that it was at least partially damaged when the building was remodeled.

Given the site's proximity to La Milpa, it is likely that Say Kah was part of the La Milpa suburban or residential area (a zone with an approximated 5km radius around La Milpa.) However, the exact relationship between the two sites has yet to be determined. One of the trenches revealed (Structure A-4/A-5 Sub) a red-plastered building that appears Late Preclassic in form. This red plaster structure was partially severed by a later structure.

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Jon Hageman returned in 2005 to complete the transect study from Dos Hombres to La Milpa. He collected numerous soil samples to determine types of activity areas such as the potential production of certain crops as well as activities such as food preparation and feasting associated with specific community groups. David Goldstein, archaeobotanist with the research program, is identifying and documenting the botanical remains. Preliminary analyses indicate a surprising degree of preservation for likely interesting and useful results.

Conclusion and Final Comments

The data presented here have documented some aspects of interaction and variation between sites that fall along the entire range of settlement hierarchy across the Three Rivers Region. As previously stated, while the various research teams associated with the PfBAP each have their own specific approach, the wealth of sites and archaeologists working together has allowed for an overall research plan that provides detailed information on a variety of different components - successfully allowing us to explore regional interaction and interdependence in more detail.

It is clear that life and livelihood in the greater Rio Bravo Management Conservation Area involved daily activities of subsistence production and consumption as well as an integrated system of ritual and beliefs. Continued research will help us to further clarify the specific ties between centers small and large. While certain interpretations are presented as preliminary, many of the findings will substantiate our current understandings or help re-direct our research as it continues in this special region of the Maya lowlands.

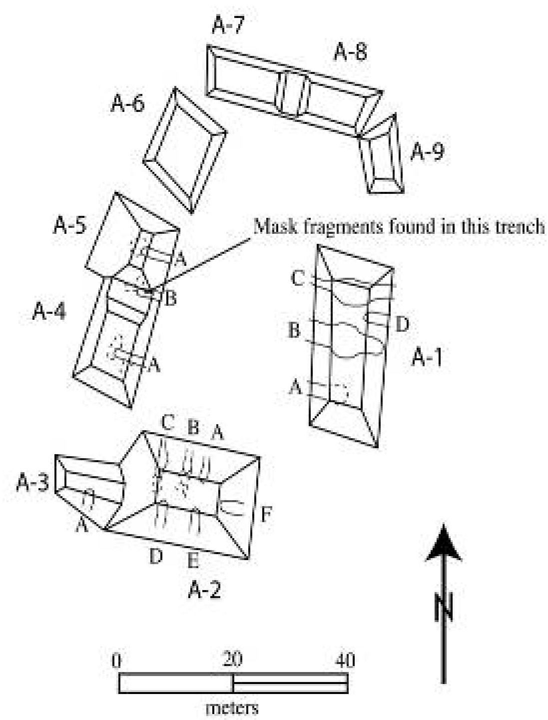

Figure 5. Map of Say Kah (Houk 2005)

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grateful to the kindness and acceptance given to us (PfBAP) from many of the Blue Creek community and particularly the Rempel and Neufeld families. The "guys" from San Felipe that make field work seem painless, our wonderful cooks, and the Garcia family all have our heartfelt thanks for taking care of us every season. Finally, we appreciate the many seasons, etc. of research by so many of our colleagues and their willingness to share ideas.

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24 RITUAL CONTINUITY, BALLCOURTS, AND COMMUNITY AT GRAN CACAO, UPPER NORTHWESTERN BELIZE

Jon C. Lohse and Kerry L. Sagebiel

Public ritual performance by community rulers in pre-Columbian Mesoamerica represented one of many possible political strategies for integrating diverse constituencies. Agentive approaches have shown how ritual specialists, often those of exalted status, called on commonly held beliefs and ideas in order to appeal to larger populations. In this study, we explore the relationship between ritual performers and commoner audiences from the Late Preclassic through the Late to Terminal Classic at Gran Cacao, northwestern Belize. Our focus begins with the Late Classic ballcourt and extends back in time at this village site, examining nearby contexts and architecture from earlier periods that help show how political relationships were fluid though remained fixed around common themes. Evidence for feasting is also considered as a form of ritual performance for the purpose of integrating this community.

Introduction

Investigations were carried out at the ballcourt of the site of Gran Cacao, northwestern Belize (Figure 1), during the summer of 2004. A medium-sized site, Gran Cacao was recorded in 1993 by the Programme for Belize Archaeology Project (Adams 1995). Based on early analysis of looted vessels and exposed stratigraphy, the site's occupation spanned from at least the Middle Preclassic perhaps until the early Postclassic (Levi 1994). Mapping and limited testing were carried out in 1994 (Durst 1996; Lohse 1995). The 2004 excavations in the ballcourt, focused on issues such as intra-community relationships involving both faction-building and creation of social distance through reifying status differences, as well as Gran Cacao's integration into a regional network of communities that interacted with each other through ballgame ceremony and competition. Results of these investigations will not only help shape the view of Gran Cacao's position in the regional political landscape, but also advance the general understanding of dynamics and tensions between political actors sponsoring public rituals and community members who participated in these events.

The Ballgame

The ballgame was significant in ancient Mesoamerican religious belief systems. According to origin myths recorded in the Popul Vuh (Tedlock 1985), the Hero Twins Hunahpu and Xbalanque endured many trials at the hands of the Lords of the Underworld, including playing a ballgame in which the losers' lives were forfeit. Through skill and cunning, the Twins repeatedly defeated the Lords and eventually took their place in the heavens as the Sun and Venus, completing the cycle of death and rebirth that underlies much of the Mesoamerican worldview (Schele and Miller 1986).

The ballgame's role in resolving mythical conflict between the Xibalban Lords and the Hero Twins was paralleled in pre-Columbian times, as political actors used ballgame rituals to accomplish a number of objectives. In the Classic period, community rulers in conflict frequently used the ballgame as a proxy for overt warfare and as a way of resolving their disputes (Stern 1950). Scholars (Santley et al. 1991) have argued that a large regional inventory

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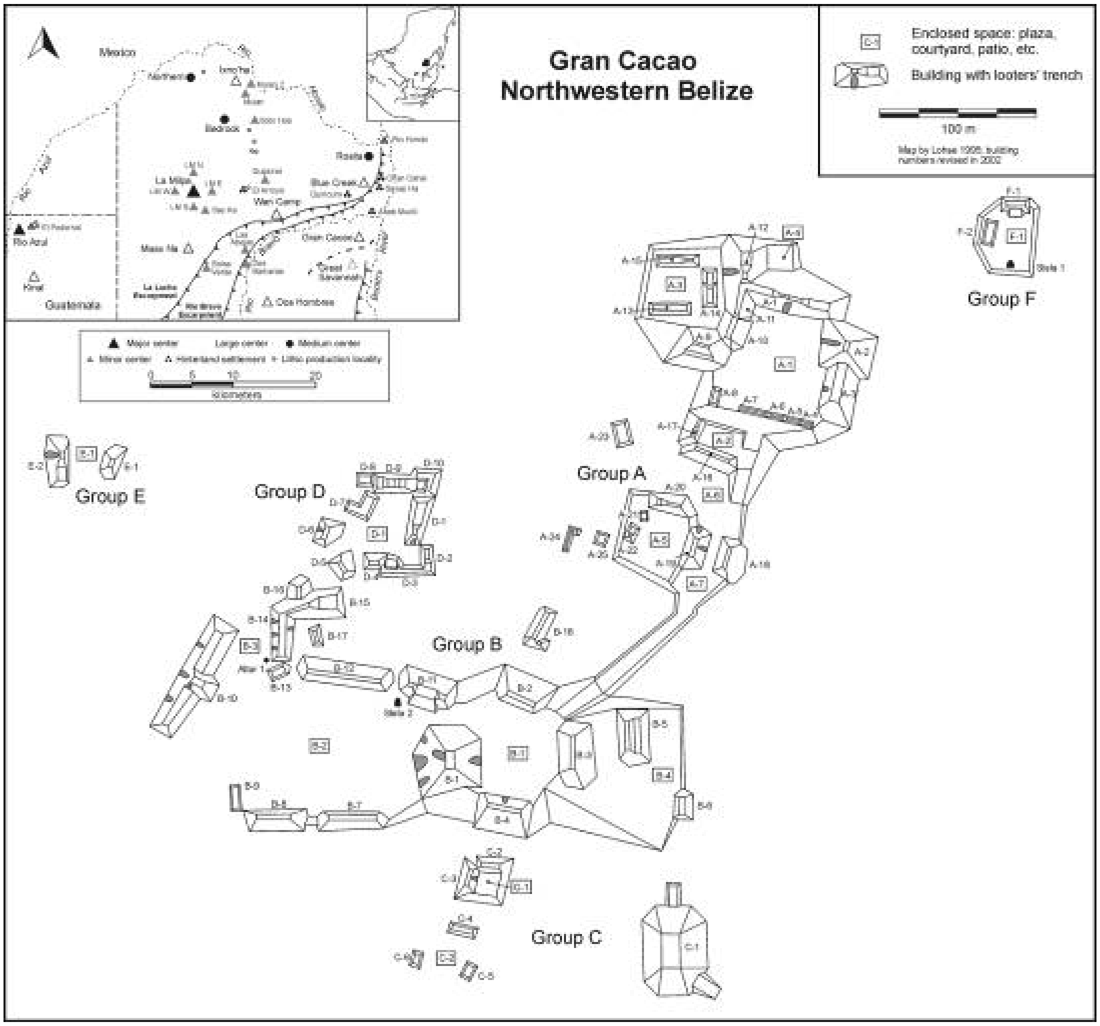

Figure 1. Map of Gran Cacao site center and its location in northwestern Belize

of ballcourts indicates political decentralization by providing evidence of multiple peer-level. Based on these perspectives, competition between political factions is implicit in the ballgame. While these factions are often unidentified (see Marcus 1996), they are thought to have been site rulers or other high-ranking members of society pursuing political agendas through public performance and ritual.

While ballgame competitions and performances for achieving regional and political objectives have received due attention scholars point to their role in shaping intra-community relationships and interaction. Fox (1996) has located middens near ballcourt alleys and behind range structures, interpreting them as the remains of public feasts that accompanied ballgame competition between parties vying for power. Combined with the pageantry that must have accompanied ballgames and the important role postulated for feasting, symbolic caching served as a means of further communicating an individual's or faction's paramount status to subordinated community members, though Urban and Schortman (1996:502) remind us that the meaning of such messages were neither universally received nor permanent in duration.

Public Ritual Performances and Community Politics

Our research of public ritual at Gran Cacao, with the ballgame as a central focus, had three preliminary objectives: (1) understand the construction chronology of and stratigraphy underlying the ballcourt, (2) seek out architectural and other evidence for rituals conducted in that part of the site center, and (3) begin to place Gran Cacao in the northwestern Belize picture in terms of both its political relationships with other nearby sites as well as the nature of its internal community dynamics (Lohse et al. 2005). Our work was guided by several questions such as:

- What does evidence for public rituals at the ballcourt reveal in terms of how they served to include or exclude different kinds of community members?
- What time depth characterized the ballgame ceremonies at Gran Cacao?
- When it did appear, did ballgame ritual represent new or novel forms of political ceremony, or did it involve reference to any pre-existing themes that can be identified?
- How can comparing ballcourt placements and chronologies help understand political interactions in northwestern Belize?

We also considered whether feasting might have occurred as another form of political ritual in conjunction with the ballgame. As discussed above, Fox (1996) argues that feasts were often hosted in connection with ballgame events, serving to signify renewal of agricultural resources, redistribute foodstuffs, and integrate communities in light of the potentially divisive effect of factional competition. Elsewhere in the Maya area, LeCount (2001), Brown (2001), and Hageman (2004) have discussed public feasting as political events (also Hayden 1995; see papers in Deitler and Hayden 2001, especially Deitler [2001] and Hayden [2001]). Following Deitler's terminology (1996, cited in LeCount 2001), diacritical feasting patterns involves consumption of "high cuisine," use of specialized serving vessels, and occur in ritualized banquet locations. As LeCount demonstrates at Xunantunich, diacritical feasts are often held in or near private areas marked by restricted access from the general site. These feasts are exclusionary in nature, hosted by the powerful for the elite. They are in opposition to inclusionary feasts in which patrons encourage a wider solidarity and equality, even if only temporarily, among consumers. Patterns associated with inclusionary feasts include abundance of commonly consumed foods, themes emphasizing broadly shared belief systems, settings that are public and open, and patterns in style of presentation and consumption that are similar to daily commensal meals (LeCount 2001:935).

Hageman (2004:68) suggests that a ratio of at least 2:1 of serving vessels (plates and bowls) to storage or preparation vessels (jars) provides ceramic evidence of feasts. Combining Hageman's method for identifying feasting from ceramic assemblages while also considering diacritic versus inclusionary events involves considering decoration and surface treatment in addition to vessel form. This allows us to recognize specialized serving vessels that can be distinguished from those used for more plebian commensal meals. We also consider architectural setting and the degree of accessibility of feast locations as an indication of the open or restricted nature of these events.

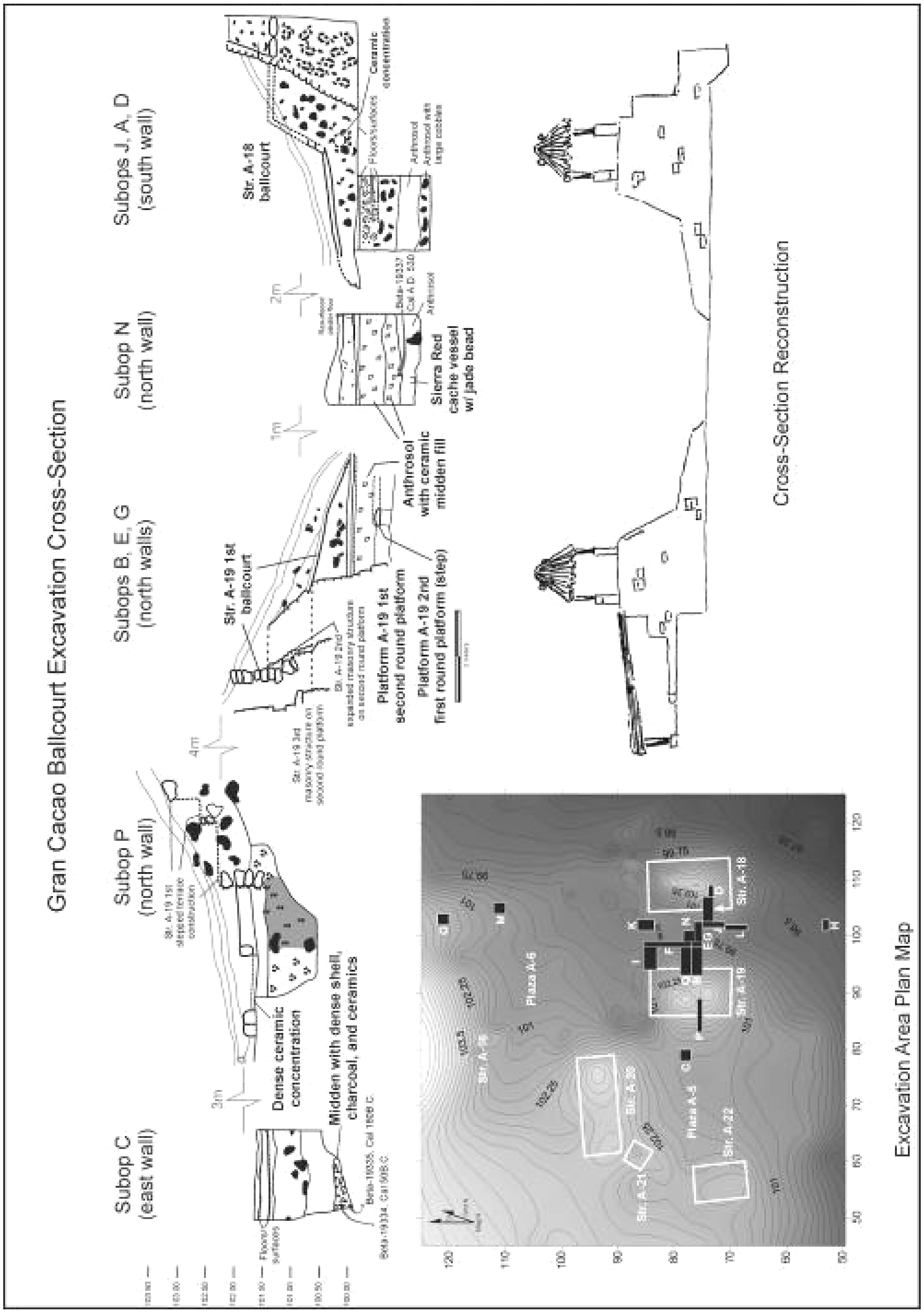

Figure 2. Cross-section of excavation profiles at Gran Cacao ballcourt.

Public Ritual in and Before the Gran Cacao Ballcourt

Gran Cacao's ballcourt is situated in the approximate center of the site. It is linked by a causeway to the major plaza, B-1, to the south and joined to an elevated platform and the open Courtyard A-6 to the north (see Figure 1). Traffic into the ballcourt from the north is facilitated by a ramp that leads eventually to Plaza A-1.

Immediately west of the ballcourt is the open Group A-5. Our excavation units were placed along the central axes and along the fronts of both range buildings, in the center of the alleyway, at both the base and top of the ramp leading to Plaza A-1, across the west side of Str. A-19 facing into Group A-5, near the center of Plaza A-5, and in the southeast corner of the low platform on which the ballcourt was built. Excavations exposed extended and complex stratigraphy representing building episodes and associated activities in the Late Preclassic, Early Classic, and Late to Terminal Classic. An extended presentation of excavation results is available in Lohse et al. (2005); here, our discussion focuses on a few key contexts and building phases and forms that provide different kinds of evidence for public ritual performance from these three time periods (Figure 2, Table 1).

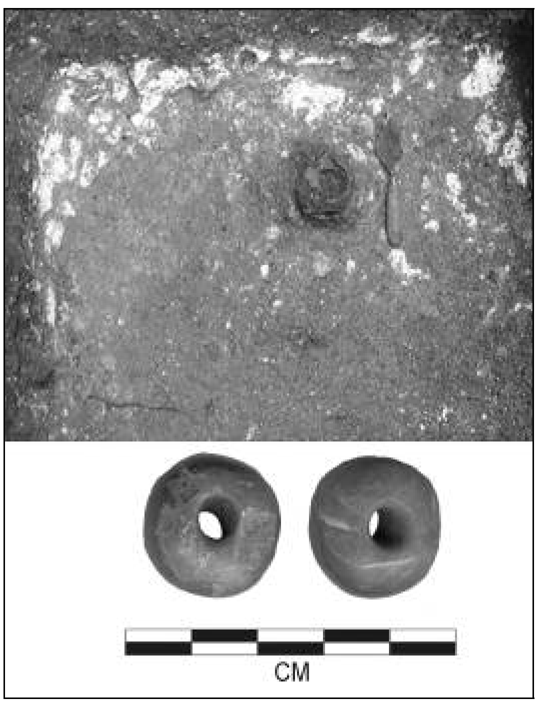

Figure 3. Cached Sierra Red tecomate and the single jade bead it contained, recovered from just above bedrock in Subop N

Late Preclassic

Late Preclassic ritual evidence comes from two sources, a Sierra Red cache vessel containing a jade bead in Subop N and a fauna- and ceramic-rich midden in a bedrock pit in the middle of Plaza A-5. The cached vessel was a badly eroded small neckless jar, or tecomate. It contained a single jade bead, measuring 1.92cm in diameter, with a bi-directionally drilled hole in the center (Figure 3). The meaning of this cached vessel, deposited in an anthrosol (human-deposited or formed soil) directly over bedrock is unclear, though it could be part of a larger pattern of offerings. However, it is consistent with dedicatory behavior that frequently accompanies Late Preclassic public constructions which, is believed to be remnants from a communal ceremonial event, perhaps associated with the sacrilegious at this part of the site.

The 50cm midden exposed in Plaza A-5 contained broken ceramics, terrestrial faunal, freshwater Pomacea f. in densities over 500 per m3, and aquatic fauna including turtle and fish. Our test pit did not uncover any nearby architecture, making it difficult to understand all of the social behavioral contexts associated with the midden's deposition. However, Plaza A-5 in the Late Classic was open and accessible, and it is highly likely that the Preclassic version was similarly arranged. We suggest that the faunal inventory, with its strong aquatic content, is representative of special food consumption. Pomacea f. are interpreted as a supplementary food source rather than a staple in the Maya lowlands. The nearest possible source for these mollusks is a small stream at least 500m away, and the densities in which they occur in this deposit exceed that expected of supplements in normal commensal meals consisting primarily of other foodstuffs.

Ceramics from the midden include a high percentage of serving vessels, including

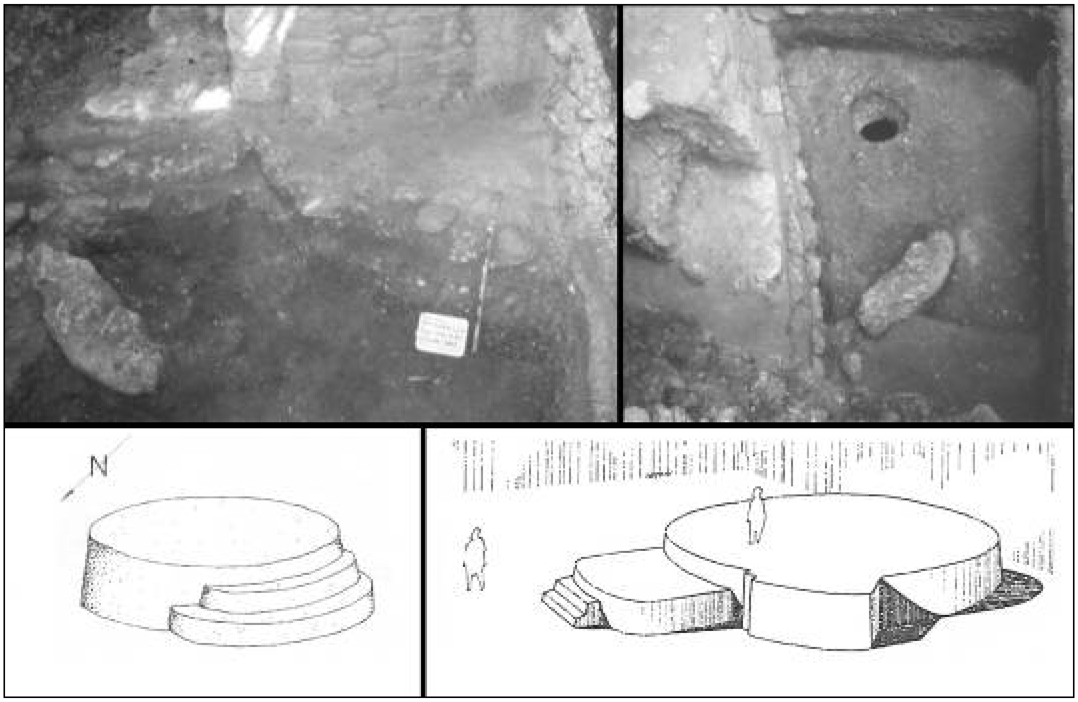

Figure 4. Round Platforms A-19 1st (upper right) and 2nd (upper left) exposed within the western ballcourt range building. Examples of complex stepped round platforms from the Zotz Group, Cahal Pech (lower left; after Aimers et al. 2000: Figure 5) and Altun Ha (lower right; after Pendergast 1982).

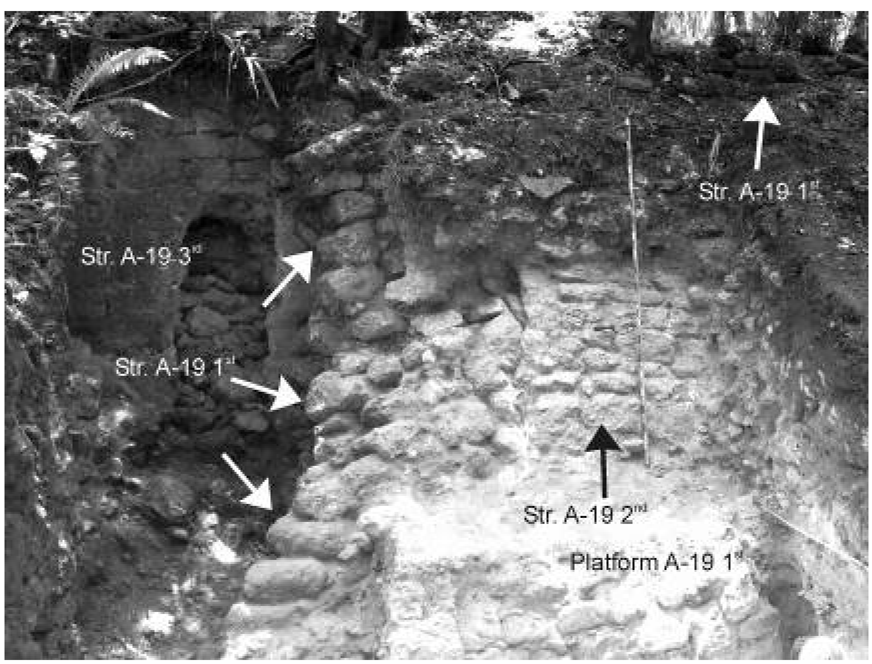

Figure 5. Closing excavation photos of masonry superstructures atop round Platform A-19 1st. Str. A-19 1st corresponds with the Late/Terminal Classic ballcourt. Str. A-19 2nd is interpreted as an expanded version of the innermost A-19 3rd that was partially removed when the entire construction was transformed into the ballcourt's western range building.

dishes (shallow plates), bowls, and buckets (Table 2). Examining mended rims indicates that at least 61 vessels are represented in this deposit. Jars make up a mere 18% of this assemblage, producing a ratio of serving to storage vessels of over 4.5 to 1. Surface treatments show only a small amount of the kind of variation that would be expected of specialized serving assemblages used for diacritical feasts. Of all of the vessels, 60% are monochrome slipped, 25% have dichrome or trichrome slips, and 5% are monochrome slipped but decorated with incising. The remaining ten percent, all storage jars, are unslipped. Given the relatively plain nature of the pottery assemblage and the probable open space associated with this deposit and the suggested ties to water – a universal theme relating to fertility and abundance – in the midden fauna, we argue that if feasting did occur here, then it was likely to have been inclusionary in nature.

Early Classic

Evidence for Early Classic ritual behavior is seen in a sequence of round platforms and associated ceramic-rich midden fill. Two round platforms, A-19 1st and A-192nd, were exposed within the western ballcourt range structure. The earlier Platform A-19 2nd was incorporated into the following construction (Figure 4). A partial stone alignment is believed to have been a step for Platform A-19 2nd that was removed in antiquity. The plaster floor abutting the later platform extends over the earlier platform and provides stratigraphic evidence that the two platforms were discrete buildings rather than a single stepped platform as has been recorded elsewhere. At sites such as Altun Ha, Cahal Pech, and Baking Pot (Aimers et al. 2000; Colas et al. 2002; Pendergast 1982), round platforms were important in fomenting group identity at both household and public scales by providing loci for ritual performances and special offerings such as burials and caches (Hendon 1999, 2000). No such deposits were found in our limited exposures, though the later Platform A-19 1st supported a rectangular masonry superstructure whose function is currently unknown and that shows evidence of having been expanded at some point (Figure 5). Following arguments by Aimers et al. (2000) and Hendon (1999, 2000), we suggest that the round platform with masonry superstructure was an important architectural component in the Early Classic Gran Cacao community, and was used for public integrative events and ceremonies.

The anthrosol abutting Platform A-19 1st contained a heavy concentration of Early Classic pottery with well-preserved slips. By counting mending rims, at least 222 vessels are represented in this fill; we believe these ceramics were used in activities that occurred in this part of the site, and can be used to address questions regarding ritual feasting. A high percentage of this assemblage (71%) is comprised of forms typically argued to have been serving wares, including bowls, plates, and vases and their lids (Table 3). More important, however, is the high proportion of slipped versus unslipped vessels (94% vs. 6%). We argue that this ratio indicates the use of most of these vessels in festival-type social presentations. The relatively low occurrence of storage or preparation vessels could indicate that foodstuffs were prepared elsewhere and brought to this part of the site.

While we lack the faunal evidence for Early Classic public ritual food consumption that was recovered from the bedrock midden in Plaza A-5, ceramics from this period provide more detailed evidence for feasting through the diversity of forms

present and the high percentage of decorated vessels. Of all three time periods, this assemblage comes closest to providing evidence of diacritical consumption. The answer to the question of how unequal social relationships were emphasized during these events, though, remains somewhat ambiguous. Architecturally, this area of the site was open during the Early Classic. The ramp linking the ballcourt to the elevated Plaza A-1 (see Figure 1) was in place at this time, and the round platforms were, by their very nature, accessible rather than restricted to passers by. We conclude, therefore, that any feasting that occurred here was probably inclusionary rather than diacritical or exclusionary.

Late to Terminal Classic

Evidence for public ritual at Gran Cacao during the Late to Terminal Classic comes from the ballcourt itself. Excavations showed that the ballcourt was built in a single episode, eclipsing pre-existing architecture. The round Platform A-19 1st and its masonry superstructure were incorporated into the new ballcourt, and the eastern range structure appeared in a single event. The politicized nature of ballgame ceremonies has been discussed, and we suggest that the sudden appearance of this stage for public ritual marked a dramatic transition in the nature of intra-community relationships.

Understanding how these relationships changed, though, requires examining the artifacts associated with the ballcourt. The context deemed best suited for considering whether feasting occurred in conjunction with ballgame ceremonies was documented in Subop P (see Figure 2), which extended into Plaza A-5. This open plaza is large enough to accommodate over 100 people, and it was hypothesized to be a possible gathering place for feasts or other events. Excavations revealed a narrow room defined by a low two-course wall parallel to the base of the building. We believe this low alignment supported a ramada-type covering (see cross-section reconstruction in Figure 2). Inside the narrow room, we exposed a dense accumulation of broken pottery laying two to three sherds deep across the floor (Figure 6). Our small sample from this context, measuring only 0.8 by 1.2m in size, recovered at least 25 vessels after analyzing mending rims.

The contents of this assemblage (Table 4) are more equivocal with respect to feasting than the two that have been previously presented. Jars, nearly evenly divided between slipped and unslipped vessels, make up 44% of this collection. Only 56% of the assemblage includes plates, bowls, and vases. On the basis of these counts, we do not believe this assemblage provides evidence for feasting. Alternative explanations for this deposit include the kinds of midden debris described for other Lowland centers as various parts of sites fell into disuse, and daily refuse was allowed to accumulate (Harrison 1999). Indeed, excavations on the northwest corner of Str. A-18, inside the alleyway, recovered a small assemblage of stone tools and chipping debris as evidence for human presence in this part of the site after the ballcourt was no longer maintained. If feasting took place in conjunction with ballgame ceremonies, our investigations did not recover confirming evidence.

Contributions and Conclusions

Work at ballcourts at other sites in northwestern Belize provides a regional context into which we can place the Gran Cacao findings. Following the discussions presented above, we see the regional appearance of ballcourts as evidence of a form of political integration or communication between centers. La Milpa and Dos Hombres, by far the largest sites in

Figure 6. Excavation photos of Subop P showing the narrow room across the west side of ballcourt Str. A-19, facing Plaza A-5 with inset close-up of sherd concentration lying on the floor. Arrows indicate the chamber in question.

the region, each contain two ballcourts; both courts at each site were constructed in the Late to Terminal Classic (Houk 1996; McDougal 1997; Schultz et al. 1994). Maax Na (Shaw and King 2002) and Chan Chich (Ford 1998) farther to the south also witnessed Late Classic ballcourt construction, providing further evidence of the region's political fluorescence. The only Early Classic ballcourts are those at Blue Creek (Guderjan 2004) and Ixno'ha (Lalonde 2002). The significance of the ballcourt chronologies for these sites is underscored by the fact that the two Early Classic courts were not modified or added onto in later times. Moreover, the alley of the Blue Creek court was even closed off with a deposit of rubbish at some point near the end of the Late Classic (Guderjan 2004), suggesting that the early prominence of that center did not carry over into the Late Classic in terms of its relationships with neighboring communities. Based on these chronologies, changes in regional site relationships corresponded with the Early-to-Late Classic transition, and Gran Cacao fell squarely within this tradition.

Our evidence from Gran Cacao supports at least two important conclusions regarding the nature of intra-community relationships as defined and maintained by public ritual. First, this part of the site was the setting for a long tradition of public integration through open ritual beginning with Late Preclassic caching events celebrating broadly shared themes of fertility and cosmic renewal. During the Early Classic, the architectural context of public ceremonies became more clearly defined, focusing on round platforms supporting masonry superstructures. Others have argued that round platforms were important loci for performances that forged and emphasized shared identities operational at both household and larger, more public scales. Whatever the symbolic significance

of this architectural complex, it was soon replaced by the ballcourt, matching developments at other regional centers. By this time, the Gran Cacao community was fully participating in the burgeoning external ties that linked them with nearby sites.

Second, we find no firm evidence that elites used diacritical feasting during any time period as part of a strategy to integrate community members while also reifying their status. Late Preclassic ritual food consumption is suggested by both the faunal and ceramic contents of the midden in the bedrock pit in Plaza A-5. The ceramic evidence from this context, lacking specialized or fancily decorated serving wares and with a high ratio of serving to storage wares is especially convincing. The best ceramic evidence for feasting is from the Early Classic, though again the combined ceramic and architectural data do not indicate exclusionary events. Even while fancy serving vessels dominate the assemblage, suggesting changes in feasting patterns from the preceding period, the setting appears to have been open and accessible to many. By the Late Classic, ballgame ceremonies dominated public events in this part of the village plan. While it remains a possibility that a number of people gathered in Plaza A-5 for attendant rituals or festivals, we cannot confirm this hypothesis with available data.

Clearly, public rituals for political purposes were multi-faceted and complex, and site rulers employed a diversity of strategies uniquely suited for different events, purposes, and audiences. Our research has shown, however, that understanding public rituals in later time periods requires considering the time depth of certain traditions and the context of negotiated relationships within a community setting. Openness and shared communal themes dominate our Late Preclassic data. The combination of Early Classic decorated wares together with an formalized architectural setting reveals that elites were going to greater effort to stage their ritual performances than in earlier times and were relying on a diversified material assemblage to underscore their status, though were still making reference to broadly shared beliefs. The ballgame – while important in the Late Classic Gran Cacao community – is best seen as an extension and elaboration of previously defined traditions carried out at that part of the site highlighting public integration and shared identity.

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25 RECENT INVESTIGATIONS OF THE STRATH BOGUE SITE, COROZAL DISTRICT, BELIZE: A POSSIBLE TERMINAL CLASSIC IMMIGRANT COMMUNITY

Josalyn M. Ferguson

Northern Belize is one of the regions within the Maya subarea that did not experience catastrophic decline and abandonment associated with the infamous Maya collapse. Many scholars have argued that this region was partially populated, and further settled by factions of migrating groups during the Terminal Classic Period (A.D. 750-1050). Recent investigations of the Terminal Classic Strath Bogue site in the vicinity of Progresso Lagoon in Northern Belize have sought to examine and reconstruct developing community patterns and processes of culture change and migration in light of social and political transformations associated with the Maya collapse. This paper will report on the preliminary finds of these investigations.

Introduction

The migration of individuals and communities throughout time and across great distances is recognized as a signature pattern throughout human history. Migrations have been documented as a prominent theme within many Mesoamerican historical narratives and in prehistoric imagery (Boot 1995; Christensen 1997). Archaeologists studying the early cultures of Mesoamerica and the Maya regularly discuss the likelihood of movements of peoples during Pre-Columbian times, particularly in consideration of the Maya collapse in the Terminal Classic Period (A.D. 750-1050). The examination of migration and migrant groups has unfortunately been hindered by critiques of diffusionist models. This is in part due to the uncritical and inadequate use of the migration concept as an explanation of culture change. While some scholars have in recent years begun to investigate migration amongst the Maya using scientific methods such as oxygen isotopic analysis (White, et al. 1998; Wright 2004) and Inductively Coupled Plasma spectroscopy (ICPS) (Cecil 2004), the identification of a migrant community in the archaeological record has remained somewhat elusive. Recent investigations of the Terminal Classic Strath Bogue site in the Progresso Lagoon vicinity of Northern Belize have sought to examine and reconstruct developing community patterns and processes of culture change and migration in light of social and political transformations associated with the Maya collapse.

The migration of Maya peoples associated with the decline or collapse of the Classic Period Maya has never truly been called into question. However, more often than not considerations of migration occur within the context of larger discussions of Terminal Classic transitions or continuities (Demarest 2004; Demarest, et al. 2004; Rice and Rice 2004). The depopulation of the Peten core area, and the coinciding rise of populations to the north and northeast, support this hypothesis (Demarest, et al. 2004:119; Fry 1989:105; Masson and Mock 2004; Sidrys 1983). Northeastern Belize is one of the regions that did not experience the abandonment associated with the Terminal Classic Collapse of many of the Southern and Central Lowland polities. Some scholars have suggested that this region was partially populated, and further settled by factions of migrating groups during the Terminal Classic Period (Ferguson 2003; Masson and Mock 2004; Sidrys 1983:399; Walker 1990). Many sites

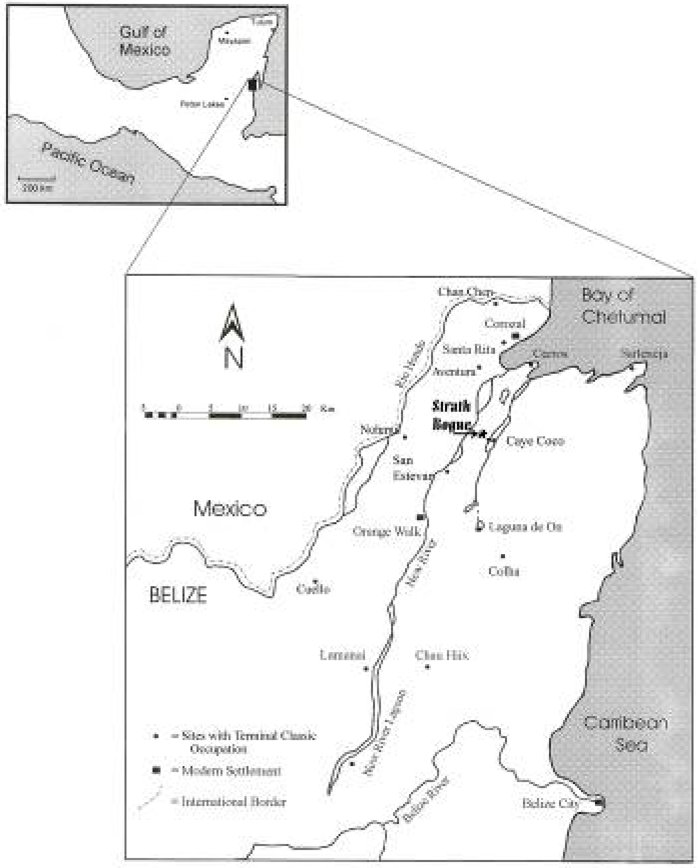

Figure 1. Northern Belize – Sites with Terminal Classic Occupation Noted.

in northern Belize are noted as having witnessed dramatic population growth during the Terminal Classic Period (Boxt 1993; Levi 1993; Sidrys 1983:399; Walker 1990), while others such as Strath Bogue (Ferguson 2003) and Caye Coco (Masson and Mock 2004), were newly settled. Recent investigations at the Strath Bogue site, conducted under the auspices of the Belize Postclassic project, paired with an examination of additional theoretical, ethnohistoric, epigraphic and archaeological data for mass population movements during the Terminal Classic Period lend further support to the migration hypothesis.

The goal of this paper is to provide an illustrative backdrop to the hypothesis that Strath Bogue was settled by migrants in the Terminal Classic Period. While many of the data that is presented may appear circumstantial or limited on their own, they together provide a compelling argument in support of the migration hypothesis, and a stage from which to proceed and further test this hypothesis.

Background

The Terminal Classic Period has typically been framed in the context of the collapse of the southern lowland Maya. The decline of many centers in and around the Peten region has been illustrated by populations in this area ceasing to erect monuments and elaborate buildings, suffering political fragmentation, undergoing significant population movements and, or demographic collapse and in many cases, abandonment of sites (Culbert 1988; Thompson 1966; Willey and Shimkin 1973). However, while many sites

and regions experienced a constellation of change during this time, not all of the Maya experienced the same degree of pronounced socio-political and economic disintegration, fragmentation and site abandonment that many sites in the central and southern lowlands did (Andrews, et al. 2003; Pendergast 1986:248; Rice 1986:281). The northern Yucatan region was flourishing during this period, as observed in the growth of many prominent centers (Andrews and Castellanos 1986; Andrews and Andrews 1980; Bey, et al. 1997; Kepecs, et al. 1994), and the initiation and expansion of economic mercantilism across much of the northern Maya region (Rathje 1975; Sabloff and Rathje 1975a, b).

Northeastern Belize is another region that did not experience the abandonment associated with the collapse (Ferguson 2003; Masson and Mock 2004). Many settlements in northern Belize (see Figure 1) witnessed increases in construction episodes and population growth during the Terminal Classic Period (Fry 1989; Levi 1993; Shafer 1983:Boxt, 1993 #642; Sidrys 1983:399). It appears as though the socio-political and economic stresses associated with the decline and abandonment of many Classic Period sites, and the concurrent expansion and prosperity of the Yucatecan polities of the northern Maya lowlands, had far reaching effects. Together they acted as the impetus for migration and resettlement across the northern Belize landscape (Boot 1997; Ferguson 2004; Rice, et al. 2004; Schele, et al. 1996; Walker 2004).

Demographic information noted by Demarest (2004:117) for the Petexbatun and Pasión river regions between A.D. 760 and 830 indicate a dramatic population decline, with populations said to dwindle to "less than 10 percent of earlier levels". Demarest credits the rampant warfare of the eighth century for such declines. He argues that these drastic demographic declines were not the sole result of related mortality rates, but more likely were due to population movements spurred by the need to look beyond the Peten for secure settlement areas not being impacted by the ensuing turmoil (Demarest 2004:118-121). The coinciding rise of populations in regions to the north and northeast of the Peten are thus significant.

In a recent re-reading of the native chronicles, paired with ongoing hieroglyphic analysis and interpretation, Schele, Grube and Boot (1996:16) have argued that migrations north and northeast to Yucatan were likely motivated by rampant warfare, and socio-political and economic disintegration. The years A.D. 670-711 are known from inscriptions to have been fraught with war and creating a refugee population that evidently migrated northward. (Schele, Grube, Boot, 1996)

Indigenous texts, most pointedly the books of *Chil'am Bal'am*, (Roys 1933; Schele, et al. 1996) discuss migrations of people traveling over great distances, and settling in various places along the way. These migrations were characterized by the Maya as the "Great Descent" or *Noh Emal*, and the Little Descent" or *Ts'e Emal* (Boot 1997:7-8; Schele, et al. 1996:363). These migrations from the Peten took place over an eighty-year period, between A.D. 650-750 and A.D. 750-950. Evidence from the Chronicles suggests that the migration of the Great Descent involved a large movement of peoples towards the west, and north (Figure 2a). The Little Descent involved less people with the advance having progressed towards the north and the east (Figure 2b). Both episodes resulted in the mass movement of peoples out of the Peten core area, and contributed to the increasing occupation of the northern lowlands. Some have argued that these movements terminated with the founding and settling of the great site of

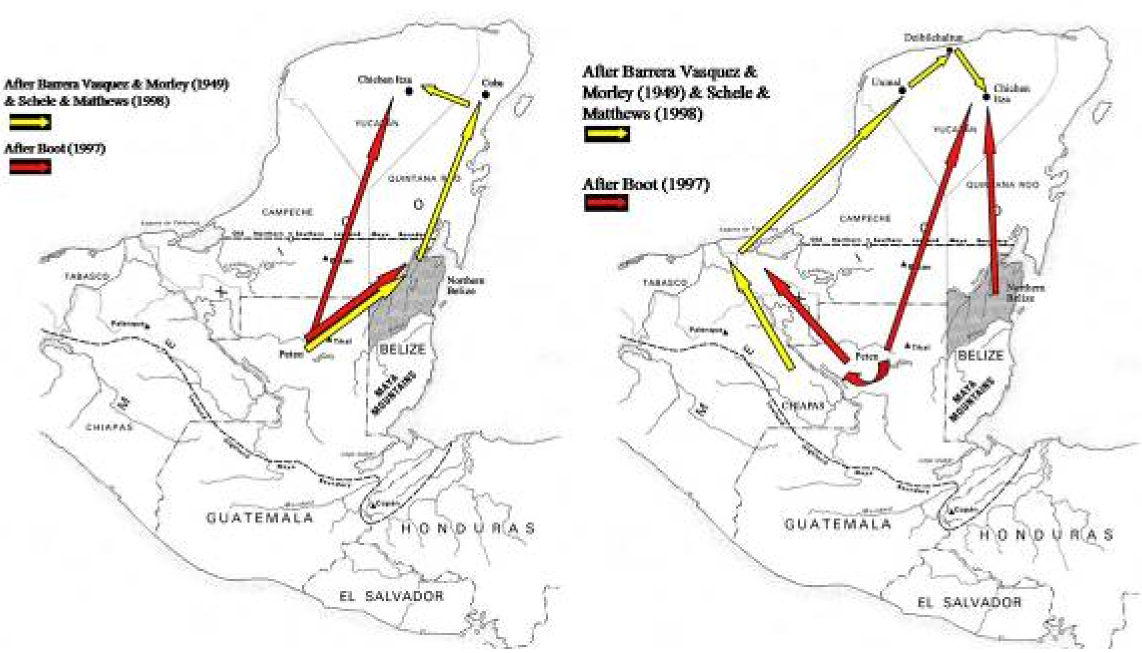

Figure 2a-b. Map indicating possible routes of Little Decent (A.D. 650-750); 2b. Map indicating possible routes of Great Decent (A.D. 750-950).

Chichén Itzá around A.D. 711 (Andrews 1990:262; Boot 1997:7; Ringle, et al. 1998:184).

There remains however, some debate as to the routes by which the migrations took place. Barrera Vasquez and Morley (1949) have argued that the Great Descent originated in Chiapas and the Usumacinta drainage and then proceeded up the western Coast of the Yucatan Peninsula, to Uxmal and Dzibilchaltun before finally arriving at Chichen Itza. They argue that the Little Descent originated in central Peten and went through northern Belize, moving up the eastern Yucatan coast via Cobá and terminating at Chichen Itza. Schele and Matthews (1998:363) are in agreement with these suggestions, in light of “new” data from Classic Period inscriptions involving the identification of the use of the *Itzá ahaw* and *Kan Ek’* title or name on vessels and murals associated within *both* the Peten and Chichen Itza regions.

Boot (1997:12) has noted that a third migration may also have occurred which did not head directly to Chichen Itza, but which first went to a place called *Siyan Kan Bak’halal*. Significantly, *Siyan Kan Bak’halal* was located within the Chetumal province, which encompasses northern Belize (Chase 1986:Fig.10.1; Roys 1957:Map 1). The *Chil’am Bal’am of Chumayel I, Tizimin and Mani* note that the migrants who established *Siyan Ka’an Bak’halal* reigned for 60 years before eventually completing their migration to Chichen Itza (Boot 1997:8). Further ethnohistoric support of the Chil’am Bal’am migration data can be found in Yucatecan terminology from the Colonial-Spanish Period. Evidently, residents of northern Belize, as well as the inhabitants of Chichen Itza, referred to themselves as *Tz’ul Winikob* or foreign people (Andrews 1990:262; Jones 1998:3).

Strath Bogue

The site of Strath Bogue is located approximately 1 km west of the western shore of Progresso Lagoon (Figure 3),

roughly 2 km east of the New River (Ferguson 2002:34), and less than 20 kilometers from Chetumal Bay and the Caribbean sea. Strath Bogue (Figure 4) is currently dominated by a large platform group, surmounted by 2 large pyramidal structures on the north and west sides, a long range-type structure on its south side, and a smaller structure on the east. Several other platform and smaller plazuela groups, and isolated mounds radiate out from this presumably central area of the settlement. According to local informants, several large mounds, including their respective platforms were completely bulldozed for road fill, in the last 10-15 years. Based on the settlement pattern and architectural data, I suggest that the site be classified as a secondary or tertiary center.

The geographical positioning of the Strath Bogue site between, and within close proximity to both the New River and Progresso Lagoon-Freshwater Creek drainage systems is key to the migration hypothesis. These waterways were one of the few easily accessible and passable gateways to and from the Caribbean Sea, and inland. It is therefore very likely that a pre-existing communication and travel route was associated with these river systems, and thus played a role in the decision to migrate using these rivers, and to settle in their immediate vicinity. The existence of such a pre-existing communication route is one of the requisite factors for population movements, according to migration theorists (Anthony 1990:895-895, 902; 1997:24, 26).

Strath Bogue is located on fertile agricultural land, in an area known to have been involved in the production and trade of cacao, cotton and honey (Chase 1986). The vicinity and site of Strath Bogue may have been of particular economic interest to the migrant population due to its resources. Evidence in support of the potential draw of the Strath Bogue locale and environment for the migrants includes the plethora of lithic tools, including biface axes and picks, as well as adzes and wedges, suggestive of agricultural and woodworking practices. An abundance of chultuns across the site has also been identified. One of the functions argued for chultuns is that they were storage facilities for surplus food products (Dahlin and Litzinger 1986).

Strath Bogue is also located in an area rich with low-mid grade quality chalcedony and chert resources, which provided an additional resource to tap, especially when one considers the coinciding, albeit short abandonment of the dominant, and recognizably superior chert production center of Colha in the Terminal Classic Period (Roemer 1991). The presence of abundant raw materials, cores, and debitage associated with every stage of production across the site suggest that the Strath Bogue community was engaged in lithic production beyond their immediate need.

By the end of the Late Classic and the onset of the Terminal Classic Period, there was a dramatic change in the economy of trade across the Maya subarea. Webb (1973; 1975) and Freidel (1986:425) have argued that there was a fundamental and general transition in the trade economy during this period, from one focused on surplus and luxury goods, to one built on symbiotic relations between polities and regions and focused on a range of goods, most prominently utilitarian items. The importance and prominence of trade and exchange to the Chichen Itza polity played an integral role in the institution and maintenance of its evolving socio-political organization and macro-regional influence and/or “control” (Andrews and Robles Castellanos 1985; Kepecs, et al. 1994:142; Robles and Andrews 1986). One of the most prominent features of the new trade

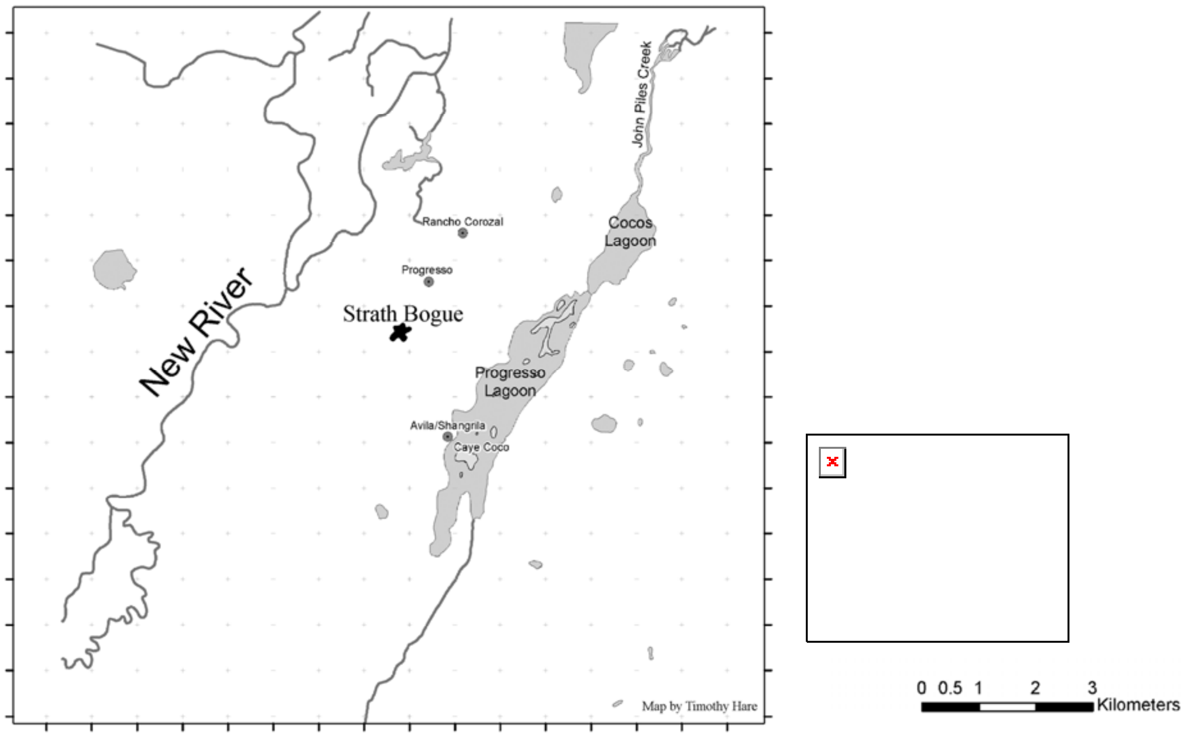

Figure 3. Progresso Lagoon and location of Stath Bogue.

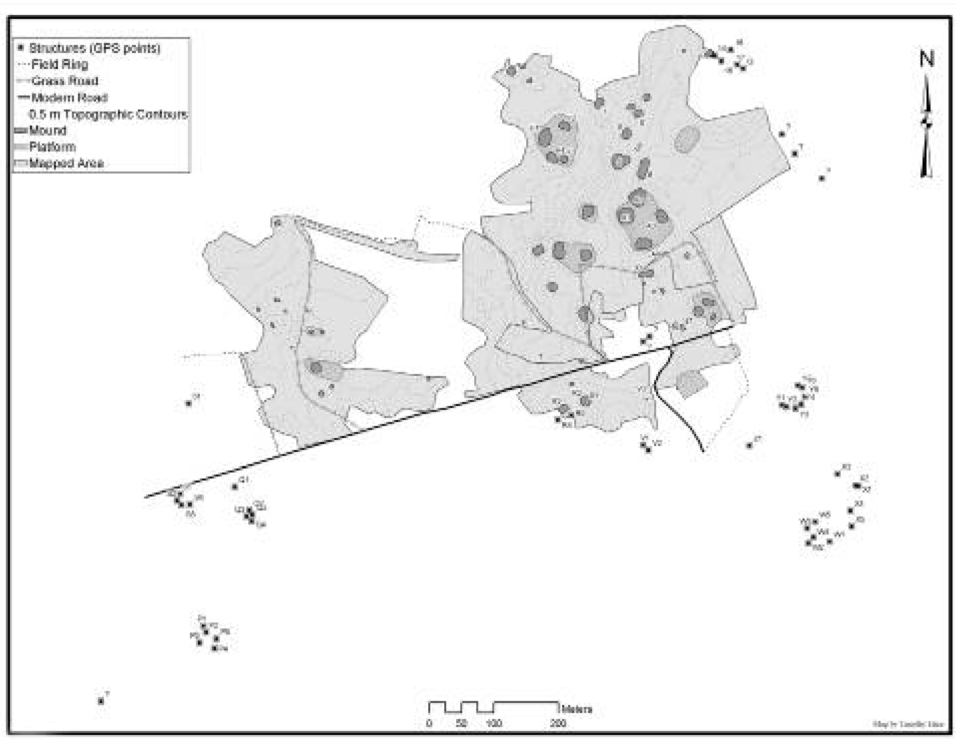

Figure 4. Map of Strath Bogue Site

economy and Chichen Itza's coinciding territorial expansion was a move towards decentralization and the establishment of "chains of secondary centers" at fairly regular intervals (Kepecs, et al. 1994:148). The New River system is hypothesized by some to have been one of the keys to the expansion of Chichen Itza and its developing trade network (Mata and Andrews 1998).

The location of Strath Bogue relative to the New River, the array of resources immediate to it, and its hypothesized classification as a secondary or tertiary site make it a plausible candidate for having been a node along Chichen Itza expanding trade network. The resources and location along this trade network may have been one of the migratory "pulls" to the region, and reason why migrants founded Srath Bogue during the Terminal Classic Period.

Findings and Evidence of Immigrants at Strath Bogue

Architecture

Debra Walker (1990:462) has identified a reoccupation of the site of Cerros in the Terminal Classic Sihnal phase (A.D. 850-1150) by a group of people she has labeled "colonizers". This occupation was marked by the "hurried renovation of ruined Preclassic mounds atop of which flagstone floors were laid." Walker postulated that the insurgence of Terminal Classic populations within northern Belize in the Terminal Classic Period were likely the result of population displacements associated with Classic Period declines and upheavals. She further argues that these peoples likely originated in the Peten and sought refuge and a new social order in northern Belize by forging an alliance with polities from the northern lowlands, or the site of Chichen Itza itself (Walker 1990:462).

Similar to the Cerros case, the Strath Bogue landscape is dotted with low lying house platforms, many of which appear to have been newly and hurriedly constructed. A prime example is Structure 30c, a house platform which excavations revealed to have also been built in one phase of construction in a hurried manner, using uncut or undressed masonry of limestone cobbles and even chert boulders. Structure 30c was similarly laid with a cobblestone floor. Also similar to the Cerros case, was the renovation or reoccupation of long abandoned structures, however in the case of Strath Bogue, not of Preclassic but of Early Classic mounds.

Of particular significance was the recognition that the largest remaining structure at the site, Structure A1, was erected in one phase of construction, as revealed through the tidying up of a large looter's pit. Even this large pyramidal structure was constructed in a hurried manner, using limestone and chert cobbles. The hurried nature of construction, the erection of large pyramidal structures in one phase of construction, and the reoccupation of a previously abandoned settlement, speak to the urgency of the people's resettlement. An urgency that very likely stemmed from a desire to escape the stress and turmoil associated with, and radiating from, the decline and collapse of many of the central and southern lowland polities.

Ceramics

Achote Black is one of the dominant ceramic types at Strath Bogue. Achote Black has been considered by many to be a marker for the Terminal Classic Period (Boxt 1993:141; Chase and Chase 1987:61; Fry 1983:200), and was first established by Smith at Uaxactun (Smith 1955:185) in the

Peten. The presence of Achote Black is significant because at Strath Bogue it occurs in two different pastes, a buff and a salmon or pink version. In his paper on the ceramics of Northern Belize, Fry (1989:105) also notes the presence of the two paste types, and suggests that the variant in pastes paired with minor formal differences likely indicates two production sources, and the possibility of imports. I propose that the two paste types may be representative of a homeland version brought with the immigrants and a local variant produced after their arrival.

Monochromes serving forms and narrow-mouthed jars, as well as wide-mouthed basins or jars are prominent forms within the Strath Bogue assemblage. Fry (1983) has noted that at nearby Pulltrouser Swamp, monochrome bowls and basins, as well as narrow-mouthed jars are rare, and are possible trade wares from the Peten (Fry 1983:208-209). He further notes that similar wares also occur at Tikal and Becan and may relate to a change in food techniques or a change in the "pottery production-distribution system" in the Late-Terminal Classic Period. In considering the migration hypothesis, I argue that changes in serving wares may correlate to the introduction of new foods or new preparation or cooking techniques introduced to the region by immigrants. Perhaps these wares that Fry suggest are Peten imports were not just trade imports, but were either brought to the region by immigrants, or were introduced to the region and manufactured locally by immigrants for their otherwise exotic foods.

Evidence for connections with the northern Yucatan region, and potentially with Chichen Itza include the presence of Yucatan Slate wares, such as Ticul Thin Slate, Dzitas Slate and trickle wares. It is possible that with the territorial expansion of the Chichen's polity, and its emphasized trade economy that the Strath Bogue site came to function as a link in one of the "chains of secondary centers" noted by Kepecs et al. (1994:142). It is possible that agricultural and lithic products produced by the Strath Bogue community came into play within this evolving system.

We have identified the development of new ceramic types in the Progresso Lagoon vicinity associated with the Terminal Classic Period. Some of these types, such as a Terminal Classic or early version of the Postclassic ceramic type Zakpah, which we have called Coco Red, are poorly executed, as they have a markedly dark core and tend to crumble easily. This type is significant in that it is consistently poorly executed and may signal attempts to replicate traditional wares from outside the Progresso area. Debra Walker and myself speculate that these ceramics presumably represent attempts to make ceramics similar to those manufactured in the immigrant homeland using traditional practices, but using new and otherwise unfamiliar clay and temper sources, and/or combinations thereof.

Conclusions

The data presented here are preliminary in nature, and require further examination and elaboration. Admittedly the data in support of the migration and resettlement of peoples at Strath Bogue are not extensive. However, recognizing data from indigneous texts, epigraphic and archaeological evidence for the migration of peoples during the Terminal Classic Period, in concert with the preliminary data from Strath Bogue, I feel confident in suggesting that the resident Terminal Classic community was established by a migrant population, possibly from the Peten core area. Evidently these people were responding to drastic changes occurring in their homeland, and thus sought to move away from otherwise troubled regions.

Realizing the growing strength of the Yucatan polities, and the potential opportunities awaiting them to the north, these people evidently took control of their plight by moving to a more stable and prosperous location, perhaps taking advantage of longstanding connections with the region, and creating a new existence for themselves.

Continuing and future research intends to include the benefit of biological and technological data as support for this migration hypothesis. The use of oxygen istoptope analysis of human bone has proven useful in determining population movements in the Valley of Mexico (White, et al. 1998) and may prove to be beneficial to the Strath Bogue case. Additionally, future chemical analysis or sourcing of ceramics from Strath Bogue's assemblage using Instrumental Neutron Activation Analysis (INAA), may provide additional insights to the geographic origins of the Strath Bogue community.

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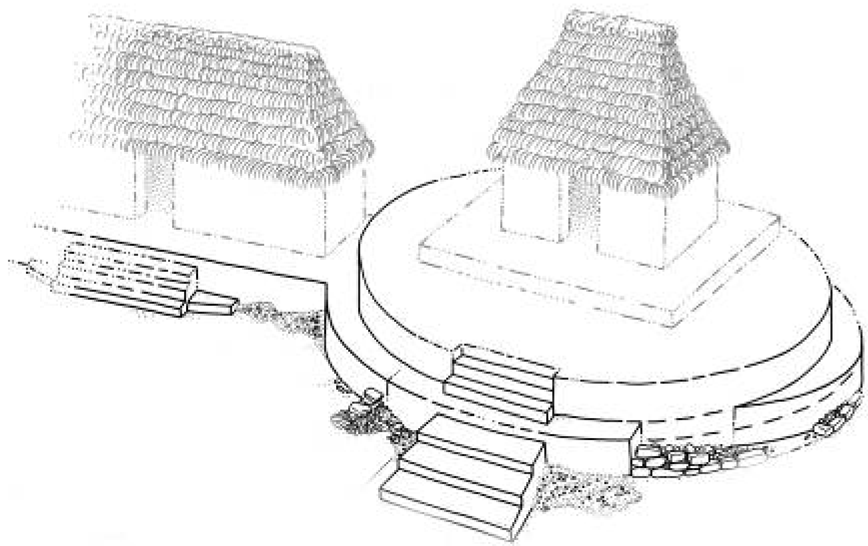
SECTION TWO: GENERAL RESEARCH PAPERS



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